

# خلاصات رسائل الدبلوم العالي في

## التقنيات المساعدة على الانجاب

جامعة النهرين

معهد أبحاث الاجنة وعلاج العقم

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة : ايمان عبد الكريم عبد الجبار سلمان

بأشراف : الاستاذ الدكتور منذر طيب البرزنجي

الاستاذ الدكتورة وفاء العمري

التاريخ : 2003

*The clinical significance of host in human intra uterine insemination*

## SUMMARY

*Eighty-four infertile patients and twenty control men were involved this study during their attendance" at High Institute for Embryo Research and Infertility Treatment. University of Baghdad. The period of this study was from June, 2002 to February, 2003. Human sperm hypo-osmotic swelling test (HOST) was used to assess the functional integrity of the sperm plasma membrane of the sperm and the fertilization potential of human spermatozoa, in addition to the seminal fluid analysis .of the fertile and infertile men.*

*The objectives of this study were to evaluate the sperm function tests, sperm HOST between infertile patients and fertile control men and determination of pregnancy rate following ovulation induction and intrauterine insemination .The effect of age of patients, duration of infertility and seminal fluid infection (SFI) on the above parameters were studied. Infertile patients were divided into groups according to infertility types, age, duration of infertility and the presence or absence of sperm agglutination.*

*The number of infertile patients with primary infertility was about three folds higher than that of the number of infertile patients with secondary infertility. Negative and significant correlation were obtained between HOST and age, of patients also between HOST and the*

*duration of infertility. This may be because the testicular blood supply will be affected and this causes a reduction in the testicular blood supply especially in the older patients and may interfere with the normal physiology of testes and epididymis. Positive and significant correlation were also obtained between HOST versus normal sperm morphology, sperm grade activity, sperm motility percent and sperm motility index. A negative correlation were also observed between HOST and abnormal sperm morphology percent. Significant negative correlation were reported between percent of sperm agglutination, and the HOST. Following the treatment of seminal fluid infection and sperm agglutination in infertile husband, ovulation induction and intrauterine inseminations were performed. The pregnancy rates were 32.54% per cycle (41/126). The distribution of HOST percent were significantly higher in pregnant groups ( $p < 0.01$ ) when compared to that in non pregnant women. It was concluded from the results of this study that, the treatment of the seminal fluid infection and sperm agglutination with the application of HOST and ovulation induction and IUI found to improve the pregnancy rate. HOST percent can be used as a diagnostic and a prognostic test in male infertility*

جامعة النهرين

معهد أبحاث الاجنة وعلاج العقم

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة : رابحة حسن غائب لطيف

بإشراف : الاستاذ الدكتور سرمد سامي خوند

الاستاذ الدكتور سعيد الانصاري

التاريخ : 2003

*luteal support therapy and embryo implantation in human IVF:program*

## SUMMARY

*The aim of the present study is to evaluate and compare the efficacy of different luteal supportive therapies in patients undergoing intracytoplasmic sperm injection program received gonadotropin stimulation with or without GnRH-against.*

*Forty six infertile women with a mean age of  $33.51 \pm 0.57$ , yrs were categorized to undergo treatment with human menopausal gonadotropin alone (protocol A), and fifty nine infertile women with a mean age of  $33.11 \pm 0.75$  yrs endergo treatment with GnRH-against. The mean duration of infertility was  $10 \pm 2.32$  yrs in protocol A and  $10 \pm 3.41$  ys in protocol B. male factors infertility were the most common causes of infertility in both protocols compared to other causes of their infertility. At the day of oocytes retrieval patients randomize to receive either vaginal progesterone 400mg /day (Group I) or intramuscular hCG 1500 iU/72hrs (Group II) or intramuscular progesterone 125mg/72 hrs (Group III), throughout the luteal phase starting from the day of eggs retrieval and continued up to day of Beta-hCG measurement 14 days after embryo transfer. Serum estradiol ( $E_2$ ) and progesterone ( $P_4$ ) levels, were analyzed and compared at the day of hCG injection, day of eggs retrieval and day of embryo transfer. Estradiol ( $E_2$ ) / progesterone ( $P_4$ ) ratios were analyzed at the day of hCG injection and day of eggs retrieval. Follicular development and outcomes of ovarian stimulation were studied also.*

*An analysis of clinical outcomes, revealed that the use of vaginal progesterone was associated with an increased incidence of chemical pregnancy per patient which was significantly higher in protocol B (40%) compared to protocol A (35%). Group II (hCG group) showed chemical pregnancy rate per patient of 33.3% in protocol B and 30.7% in protocol A. The lowest incidence obtained was in group III (intramuscular progesterone 27.2% in protocol B versus 22.2% in protocol A). At the day of human chorionic gonadotropin (hCG) administration, estradiol ( $E_2$ ), progesterone ( $P_4$ ) and  $E_2/P_4$  were significantly different in protocol B compared with protocol A. At the day of eggs retrieval, serum estradiol ( $E_2$ ) and  $E_2/P_4$  were significantly different in protocol B compared with protocol A. While, there was no significant difference regarding progesterone ( $P_4$ ) levels in both protocols. At the day of embryo transfer, in cycles where additional exogenous human chorionic gonadotropin (hCG) was given in group II as a luteal support, estradiol ( $E_2$ ) levels were significantly higher than what was noted in cycles supported with vaginal progesterone, or with intramuscular progesterone. While serum progesterone ( $P_4$ ) levels were significantly higher in group III compared with group I and group 2 in both protocols. There was a significant difference with regard to the mean ( $\pm$ SE) duration of controlled ovarian hyperstimulation (COH) in protocol A compared to protocol B. No significant difference with regard to the cycle day of human chorionic gonadotropin (hCG) administration. The total number of gonadotropin ampoules used for patients was significantly higher in protocol B compared with protocol A. Endometrial thickness did not vary significantly on the day of hCG administration in protocol A and B. Significantly higher number of follicles > 17mm in diameter were observed in protocol B than in protocol A. The total number of oocytes retrieved from patients, the mean number of oocytes retrieved per patient, the number of mature oocytes and the number of fertilized oocytes were significantly higher in protocol B compared with A. higher fertilization rates obtained in patients involved with protocol B compared with protocol A. It was concluded from this study that the use of vaginal progesterone as a luteal support at the day of egg retrieval has improved our figures especially when GnRH-agonist was used for*

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رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحث : رحيم داود محيسن ظاهر

بإشراف : الاستاذ الدكتور سعيد الانصاري

الاستاذ الدكتور زياد طارق النائب

التاريخ : 2003

*The as thenospermic semen and IVF rate and embryonic development in tro*

## SUMMARY

*One hundred and eighty seven patients with innle infertility foclois and 50 fertile male were involved in tills study. The wives of those infertile males had a normal profile ol reproductive hormones and patent fallopian lubes. 'Hie study was performed al Baghdad IVF Institute for the period from March 2002 to March 2003.*

*Sperm function tests were performed to al! patients and fertile me!!. Human menopoasal gonadotropiu and human chorionic gonadotropin induced ovulation induction for these females. The slander in vitro fertilization (IVF) and embryo transfer were done.*

*The objective of the present work was to study the effect of asthenospermia on in vitro fertilization and embryonic development. Sperm function tests (sperm motility percent, sperm grade activity and sperm motility index) of asthenospermic semen were significantly decreased with advance age of the patients. The leproductive hormones (Follicular Stimulating hormone (ISM).Luteniztng hormone(LH), Prolactine(PRL) and TesloKteionc hoimoues) concentinfmn in the seium was inni!:.cdl;. aOecled the spoil" m^tility. IVI irMonnd piepjiancy into. The inner:'; in Leukocytes coucoulnilu'ii and spetm apjilutinalion poiccm" lxd reduced ^pcrm motilit\ p'.Mceni. I he result?! f;hn\ved.thMl llu> IVI ontc VsJi.s sij'.uiliranll". le'liic-d \\!i/im sp<»uu mo1«!i! ;»n;l ni:u!': ;iclt?-i> of infertile semen decreased.*

*The results indicate that sperm motility and activity arc very important factors in the prognosis of the outcome IVF.*

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معهد أبحاث الاجنة وعلاج العقم

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحث : معمر نوري محمد عباس

بإشراف : الاستاذ الدكتور عدنان صالح الجنابي

الاستاذة باسمه محمد عبد اللطيف الجبوري

التاريخ : 2003

*The effect of addition of glycyrriza glabra crude extract on in vitro human sperm activation of infertile patients*

## SUMMARY

*The objective of the present study was to investigate the possibility of using Glycyrrhiza glabra for in vitro activation of sperm of infertile human semen. Two hundred ten infertile patients were involved in this study, four concentrations of Glycyrrhiza glabra were tried (0.1, 0.2, 0.3 and 0.4 mg/ml). Simple layer technique was used for sperm activation in vitro, with incubation period of 30 minutes. The comparison in all samples was based on the changes obtained in the same semen sample before with Hiale's balance salt solution (EBSS) and sperm preparation medium (SPM) and after the addition of Glycyrrhiza glabra. The results indicated that Glycyrrhiza glabra added showed a positive effect on most sperm parameters studied, i.e. positive results were obtained using 0.1 mg/ml Glycyrrhiza glabra with EBSS and SPM on sperm function tests namely: increase sperm motility percent and grade activity of progressive forward movement with a decrease in leukocytes count and abnormal sperm morphology percent. Other Glycyrrhiza glabra concentrations did not show any significant decrease in sperm motility percent and grade activity. However, there was a significant increase in morphologically abnormal sperm percent and leukocytic count. These results were attributed to the effect of various components of Glycyrrhiza glabra, especially the antioxidant*

*substances, estrogenic and anti estrogenic substances together with various trace elements and protein on these sperm parameters. It was concluded from the results of present study that*

*addition of Gly. To the semen of infertile patients enhance sperm functions following in vitro activation technique.*



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رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحث : نافع احمد سعود محيسن

بإشراف : الاستاذ الدكتور عدنان صالح الجنابي

الاستاذة باسمه محمد عبد اللطيف الجبوري

التاريخ : 2003

*Effect of experimentally induced hypothyroidism on adult male mice fertility*

## SUMMARY

*The objective of the present investigation was to study the role of thyroid hormones in male fertility. The study involved induction of hypothyroidism by the administration of an anti-thyroid drug (Carbimazole) given in two doses: 0.02 and 0.05 mg/30 g. B.W. given (orally) daily for 2, 3 or 4 weeks.*

*The study also included effect of thyroid gland removal (thyroidectomy) after the same periods of drug administration. Adult, male mice were used in the study (n = 123 animals) the following parameters were determined: Body, thyroidal, testicular and epididymal weights, sperms characteristics (concentration, % of motility, grade of activity, index of motility and % of abnormal sperms). Results indicate a significant ( $P < 0.05$ ) decrease in body weight after 4 weeks of Carb- treatment; however body weight of thyroidectomized mice showed a significant ( $P < 0.05$ ) increase after 2 weeks of the operation. Testicular weights showed a significant increase after 4 weeks of treatments, epididymal weight showed a decrease in weight after 4 weeks of treatment. The thyroidal weight however showed a significant increase ( $P < 0.05$ ) in mice that have received the lower dose while animals that have the higher dose showed a significant decrease ( $P < 0.05$ ) as compared to the control. These changes in the thyroidectomized mice showed a different picture so far as , body weight since increased significantly in all period, while , changes in testicular and*

*epididymal weights were identical to these of Carb treated animals. Changes in sperm characteristics included a significant decrease ( $P < 0.05, 0.01$ ) in sperm concentration , motility % , grade of activity , sperm motility index and a significant ( $P < 0.05$ ) increase in % of sperm abnormality in all animals belong to Garb treated or thyroidectomized . It may concluded that thyroid hormones are essential for maintaining normal male reproductive system and any manipulation in the levels of these thyroidal hormones through administration of anti thyroid drugs or removal of the gland can lead to a damaging effect on sperm characteristics.*

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رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة : منال طه متعب عنبر

بإشراف : الاستاذ الدكتورة وفاء العمري

الاستاذ الدكتورة سعيدة علي الانصاري

التاريخ : 2003

*The effect of hyperprolactinaemia on human folliculogenesis and endometrial thickness*

## SUMMARY

*This research was conducted to study the effect of elevated prolactin (PRL) concentration (above physiological value) on follicular growth and endometrial thickness in 69 hyperprolactinemic patients attending IVF Institute for Embryo Research and Infertility Treatment, University of Baghdad. The mean age of patients was 33 years, and the mean duration of infertility was 11 years. Number of control women was 40 with mean age of 30 years old. Hormonal assay of gonadotropin hormone (FSH, LH) was performed on cycle days (CD) 2,12. The estradiol (E2) concentration was measured on CD 2,8,10,12, and progesterone on CD 21. While the PRL hormone was performed on CD 2,12,21. Ultrasound examination for the measurement of follicular growth and endometrial thickness was performed on CD 8,10,12. The hyperprolactinemic patients were treated with bromocriptine (parlodel) for normalization of PRL hormone concentration, and then the hormonal and ultrasound investigation were repeated. The control and infertile patients were entered ovulation induction program during which ultrasound, estradiol and PRL hormone assay were performed on CD12. In some patients intrauterine insemination was done while in other natural intercourse was performed. The patients were divided into 5 age groups and 4 ranges of duration of infertility. The effect of these two parameters and effect of cycle day on PRL concentration were also studied. The PRL concentration was found to increase with increase age and it became at significant level*

above age of 36 years. It also increased with an increase in duration of infertility but without significance value. The highest level of PRL was found to be in the Preovulatory period. PRL

concentration although it was higher in secondary than primary infertility but without significance. After determination of prolactin values, the patients were divided into three groups, the gonadotropin and ovarian hormone was decreased with increase PRL concentration, and in addition they were significantly lower than control group. The follicular growth and endometrial thickness were less with increase PRL concentration and they were significantly less than control. Treatment of hyperprolactinemic patients with bromocriptine (parlodel) resulted in normal physiological level of prolactin and this caused normalization of gonadotropin hormone, ovarian hormone, follicular growth and endometrial thickness. These hormones values returned to the normal value without any significant differences from that of control. After normalization of prolactin level 12 patients followed up for two months, 2 from 24 cycle became pregnant spontaneously, while the other (57) patients scheduled to ovulation induction program with clomiphene citrate, human menopausal gonadotropin. There was no significant difference in follicular growth, gonadotropin and human chorionic endometrial thickness and estradiol concentration on CD 12 between hyperprolactinemic groups after normalization of PRL concentration with parlodel and control group, but there was elevation in prolactin concentration in both groups and became significantly higher in previously hyperprolactinemic treated group than control group. The patients were scheduled to ovulation induction program. Twenty-three of them had timed sexual intercourse, seven repeated in the second month, and the pregnancy rate per cycle was 13.33%. Thirty-four patients had intrauterine insemination, ten repeated in the second month, and the pregnancy rate per cycle was 31.81%.

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رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة : زبيدة عبد القادر احمد محمد

بإشراف : الاستاذ الدكتور منذر طيب البرزنجي

الاستاذ الدكتور سرمد خونده

التاريخ : 2003

*The clinical significance of human sperm penetration assay in IVF patients*

## SUMMARY

*The objectives of the present research work were to study the clinical diagnostic and therapeutic significance of sperm penetration assay (SPA). This test is a multi - step laboratory test which uses zona - free hamster oocyte as a model for in vitro fertilization. To examine the diagnostic accuracy of (SPA) and semen analysis parameters for prediction of fertilization in vitro and embryo transfer. The work was carried out in High Institute for Embryo Research and Infertility Treatment at University of Baghdad for a period of one year. The study covers three major experiments.*

*The first experiment studies the effect of in vitro activation of infertile semen samples. Seventy five infertile patients were involved in this experiment. The patients were divided into three age groups (20 - 30 years), (31 - 40 years) and (>40 years). Sperm function tests were studied (sperm concentration, sperm motility percent, grade of sperm motility and normal sperm morphology). Results showed that all semen parameters were significantly affected by in vitro activation. Normal sperm morphology showed significant improvement after in vitro sperm activation in all age groups ( $p < 0.001$ ). Sperm motility percent and grade of sperm activation significantly increased after in vitro sperm activation ( $p < 0.005$ ). High significant improvement in sperm parameters was noticed in younger age group ( $p < 0.001$ ) in regard to sperm motility percent, grade of sperm activity and normal sperm morphology. High significant improvement in sperm parameters noticed in younger age group ( $p < 0.001$ ) in regard with motility, grade of activity and normal sperm morphology. A second experiment was carried out on those 75 infertile male*

patients in which sperm penetration assay was done using zona free hamster oocytes. Mature female golden hamsters were super ovulated with pregnant mare's serum gonadotropines. Hamsters were sacrificed and their zona free oocytes were used as a model to examine the penetration ability of human sperm. Each sperm sample was in vitro activated and incubated with ten zona free hamster oocytes. Penetration rate and penetration index were recorded for each patient. The patients were divided into three age groups also to investigate the effect of age on the penetration ability and fertilization potential of human sperm. Significant effect of age was found on the penetration rate of semen samples ( $p < 0.01$ ) indicating that fertilization potential of human sperm declines with age. In the third experiment in vitro fertilization cycle was performed on 100 infertile couples. Penetration rate of human oocytes were studied in regard to sperm function tests and sperm penetration test. Tin's T-eranent studied the importance of semen analysis parameters (count, infertility, grade of motility and normal sperm morphology) and SPA as prognostic tests for successful fertilization by human sperm of homologous oocytes in vitro. Significant correlations were found between human sperm penetration percent of hamster oocytes (SPA) and semen parameters - sperm concentration ( $r = 0.5$ ), motility ( $r = 0.61$ ), grade of activity ( $r = 0.80$ ) normal morphology ( $r = 0.81$ ). Human sperm penetration percent of human oocytes in (IVF) showed significant correlation with sperm motility percent ( $r = 0.59$ ), grade of sperm activity ( $r = 0.58$ ) and sperm normal morphology ( $r = 0.61$ ). Sperm concentration did not show significant relation with penetration percent of human oocytes ( $r = 0.34$ ). Results showed that SPA successfully predicts in vitro fertilization. Hence significant correlation was found ( $p < 0.001$ ,  $r = 0.65$ ) proving that SPA is more sensitive screening tool for prediction of in vitro fertilization than semen analysis parameters. This test minimizes failed fertilization cycles by determining which couples would benefit from IVF or ICSI. This will decrease fertilization failure rate and in the other hand will avoid unnecessary ICSI.

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معهد أبحاث الاجنة وعلاج العقم

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحث : لقمان جمعة توفيق ابراهيم

بإشراف : الاستاذ الدكتور زياد طارق النائب

الاستاذة باسمه محمد عبد اللطيف الجبوري

التاريخ : 2003

*Effect of glycerrhiza on reproductive hormones and semen quality infertile patients*

## SUMMARY

*The effect of licorice extract (Glycyrrhiza glabra) on reproductive hormones and semen quality of infertile patients attending to the Institute of embryo researches and infertility treatment / Baghdad University .Eighteen patients (25-45 years) were divided into three groups (6 patients / group): G1, G2 and G3, patients of each group was administrated 1,2, or 3 gm / day respectively with licorice extract dissolved in a cup of water for the period of three months. Hormonal analysis of FSH and LH serum levels was performed before and after 1,2 and 3 month of licorice administration. Also seminal fluid analysis were estimated for semen volume, sperm concentration, sperm motility percent and grade of active motility, before and after every two weeks of licorice administration, till the end of the experiment. Results showed that, there was a significant increase ( $p < 0.05$ ) in serum FSH levels, and a significant decrease ( $p < 0.05$ ) in serum LH levels of all treated groups at the end of the experiment in comparison with the pretreatment values. Sperm concentration, semen volume, motility percent and grade of active motility showed a highly significant increase ( $p < 0.01$ ) in the experiment groups during the whole time of treatment. These results indicate that consuming licorice extract in small dose ranging between (1-3 gm / day) for few months improves the reproductive hormonal status in addition to the quality of the seminal fluid of the infertile patients. These results may open the way for further investigation to utilize glycyrrhiza as a treatment for certain types of male infertility*



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رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحث : عبد العالي حسين سلمان

بإشراف : الاستاذ الدكتور منذر طيب البرزنجي

الاستاذ الدكتور زياد طارق حمدي النائب

التاريخ : 2003

*The clinical significance of testicular biopsy and TESE in ICSI program*

## SUMMARY

*The objective of the present research was to study the clinical significance of testicular histophysiology of the open diagnostic testicular biopsy in azoospermic men as a predictor of sperm retrieval success rate with testicular sperm extraction (TESE) prior intracytoplasmic sperm injection (ICSI) program for the treatment of infertile patients. The work was carried out in IVF Institute for Embryo Research and Infertility Treatment, at Baghdad Teaching Hospital, Baghdad University. The period of this study was from June 2001 to March 2003. One hundred and ten men consisted of forty-four healthy fertile men and sixty-six infertile azoospermic patients were involved in this study. The diagnosis of azoospermia in the infertile men was based on seminal fluid analysis, reproductive hormonal profile, testicular size and bilateral testicular biopsies. This study showed that the mean testicular size (cm) and the mean reproductive hormones (FSH, LH, Testosterone and prolactin) concentrations of infertile azoospermic men were significantly different ( $P < 0.01$ ) from control fertile men. The testicular tissue samples from infertile azoospermic men were prepared for histopathologic examination. The men were categorized based on review of the most advanced patterns of spermatogenesis, on the presence or absence of focal area of spermatogenesis and on the types of spermatogenic maturation arrest seen on histology from open diagnostic testicular biopsies into nine main groups:*

- 1- Normal spermatogenesis.*
- 2- Hypospermatogenesis.*
- 3- Partial spermatogenic maturation arrest.*



4- *Spermatogenic maturation arrest with focal spermatogenesis.*

5- *Classical spermatogenic maturation arrest*

6- *Sertoli cell only with focal spermatogenesis.*

7- *Classical Sertoli cell only.*

8- *Tubular fibrosis with focal spermatogenesis.*

9- *Tubular fibrosis with no focal area of spermatogenesis*

The mean testicular size of azoospermic patients with normal spermatogenesis histopathologic pattern was significantly larger than other histopathologic groups ( $P < 0.01$ ) except partial maturation arrest. The mean FSH concentrations of azoospermic with normal spermatogenesis histopathologic Pattern were significantly higher ( $P < 0.01$ ) than other histopathologic except partial maturation arrest. The mean LH and prolactin hormone concentrations of normal spermatogenesis group were significantly lower than tubular fibrosis group. Where as the mean testosterone hormone significantly higher compared to maturation arrest with focal spermatogenesis, classical Sertoli, cell only and tubular fibrosis. Sperm retrieval was performed by utilizing an open testicular biopsy technique, named testicular sperm extraction (TESE) and forty -one azoospermic men participated in TESE technique. Spermatozoa were successfully retrieved with TESE from 23 of 41 patients (56.09 %). all patients with normal spermatogenesis, 39.13 % of patients with spermatogenic maturation arrest and 33.3 % of patients with classical Sertoli cell only had successful sperm retrieval with TESE. It was concluded from the results of this work that testicular histology evaluated on open diagnostic testicular biopsy is the most informative and useful predictor of sperm retrieval success rate in TESE-ICSI program when compared with mean testicular size and FSH concentrations. The new histophysiological classification of the testicular biopsies in the open diagnostic testicular samples was found to be useful prognostic predictor to select patients for TESE-ICSI treatment.

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رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحث : محمد احمد عباس احمد

بإشراف : الاستاذ الدكتور عدنان صالح الجنابي

الاستاذ الدكتور ناثر سعيد حاوا

التاريخ : 2003

*Effect of oxytocin on human sperm activation in vitro.*

## SUMMARY

*The study was conducted with the aim of investigating the effect of oxytocin (OT) addition to semen of patients attending the High Institute for Embryo Research and Infertility treatment (n = 120 patients), with the hope of improving some of their sperm characteristics (Experiment I). The period of the study extended from February to August 2002.*

*Several concentrations of OT were tried: 1, 2, 4, 6 and 10 IU/ml on activated sperm using simple layer activation technique and incubated for 0.5, 2 and 4 hours (n = 60 patients). Results of this experiment showed that, highest OT concentration used (i.e. 10 IU/ml) decreased significantly ( $P < 0.05$ ) grade of activity (GA) and percent of sperm motility (SM). Moreover, the decrease in GA in the 10 IU/ml started half an hour after incubation with a more pronounced decrease after longer incubation period, while the decrease in SM started 2 hours after incubation. The other sperm parameter studied was hyperactivity (HA), which seemed to have increased very markedly in all concentrations of OT used with a tendency for an increase in HA parallel to the increase in OT concentration. In the remaining 60 patients, the lowest suitable OT concentration (i.e. 2 IU/ml) was used. Two dilution media were tried, normal saline and sperm preparation media, in activated and unactivated sperm. Result showed that, GA increased significantly ( $P < 0.05$ ) in unactivated sperm with sperm preparation media, while normal saline failed to induce any change in all parameters studied. Another experiment (Experiment II) was also conducted in which OT in 2 IU/ml concentration was tried on sperm obtained from the*

*epididymis of the mice. Results indicated that, OT caused a highly significant ( $P < 0.01$ ) increase in GA, and markedly increased in sperm hyperactivity.*

*These results indicated that, OT addition to sperm is of a beneficial effect on sperm activity leading to increase GA of inactivated human and mice sperm together with an increase in hyperactivation. Consequently, these effects may be useful in intrauterine insemination (IUI) and in vitro fertilization (IVF) programs.*

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معهد أبحاث الاجنة وعلاج العقم

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة : ابتسام فاضل زيدان خلف

بإشراف : الاستاذ المساعد الدكتور سعد صالح الدجيلي

التاريخ : 2004

### *Vitality tests role in male infertility diagnosis*

## SUMMARY

*The aim of the present investigation was to find out some accurate non obvious factors related to male infertility in patients by using some vital tests. Hundred persons were involved in this study. Routine semen analysis was done to classify the type of infertility. Vitality tests namely; WHO staining methods (Eosin alone and Eosin - Nigrosin stain) and modified Kruger strict criteria (MKSC) were performed to measure the percentage of morphologically abnormal sperm. Two HOST solutions were used .0 measure the percentage of sperm viability. PCT was accomplished for 20 couples as unexplained infertility factor. Seven couples were excluded due to negative PCT. There was a significant difference ( $P = 0.05$ ) in sperm concentration, motility percentage and the grade activity of progressive forward movement between male factor group and both, the control fertile) and unexplained infertility groups. The percentage of morphologically abnormal sperms(MAS)in unexplained infertile rroup using MKSC method was significantly higher ( $P < 0.05$ ) than using WHO staining and HPF methods. The percentages of sperm viability of fertile (control) group using two HOST solutions (simple classical or WHO) were significantly higher ? $< 0.05$ ) than that in unexplained infertility and male factor groups. However, no significant difference ( $P > 0.05$ ) was recorded between the two IHOST solutions.*

*Post coital test in control (fertile) and unexplained infertile showed a significant reduction ( $P < 0.05$ ) in the mean of sperm concentration ( $47 \times 10^6$  Vs  $26 \times 10^6 / ml$ ) and sperm utility percentage (60% Vs. 51%), in addition to a significant increase ( $P < 0.05$ ) in MAS and the number of round cells in the infertile group. Following PCT, the percentages of MAS in the*

*unexplained infertile group were significantly higher ( $<0.05$ ) than that of fertile group. results of the present research revealed that MKSC, and PCT methods have a significant improvement in*

*the s of some infertility causes such as unexplained infertility. was concluded from the results of this study that the \*c vital tests may be urgently require in the assisted technique/ART)Centers and andrology laboratories to infertility in males. This in turn offers a successful chance physician to treat accurately.*

جامعة النهرين

معهد أبحاث الاجنة وعلاج العقم

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة : اديبة اسماعيل علي ابراهيم

بإشراف : الاستاذ الدكتور عدنان صالح الجنابي

التاريخ: 2004

*Association between certin ov arian activities and endometerial thickness with*

## SUMMARY

*The objective of the present work was to study the effect of age on ovarian activities leading to menopause in a group of Iraqi women. Since such data are not documented in Iraq and were limited with what is available, ultrasound findings at the middle of the menstrual cycle which is usually carried out to assess ovarian activities during investigation of fertility problems, were evaluated and correlation done with age. All women included in the study were selected on the basis that no obvious ovarian pathology was present according to their ultrasound records. The subjects were divided into two major groups: 1-parous group included women who had completed at least one pregnancy to full term (n=81) and 2-nulliparous, those who had no pregnane}- or had aborted pregnancies (n=102). Each major group was further subdivided into 4 groups according to age .The interval between one age group and another was 5 years interval. The following information was collected and analyzed from ultrasound findings: ovarian size, presence of antral follicles, size of the dominant follicle, percentage of follicles less than 14mm in diameter, endometrial thickness and percentage of women who had endometrial thickness of less than 7mm .In addition number of aborted pregnancies among parous women was studied. A correlation study was done between these variables in different age groups. The results showed that, the percentage of aborted pregnancies increases with advancement of age and U/S findings showed that, the mean ovarian sizedecreased significantly with advancement of age; presence of ovarian follicles was the highest percentage in the first age group (30-34years), declined in the second age group (35-39years), rose-up in the third age group (40-44years) to*

*decline again in the fourth age group (45+years) .As regard to the size of the ovarian follicles, it did not follow a special pattern but the percentage of follicles less than 14 mm increased on age*

*advancement and was highest in the oldest age group i.e. 45years+ which might reflect the increased incidence of anovulatory cycles as age advances. Endometrial thickness was also studied and it decreased with the advancement of age .Also the percentage of women having thin endometrium (less than 7mm) increased with advancement of age and was highest in the oldest age group .In conclusion the results of the sample of Iraqi women studied have shown that deterioration of ovarian activities is beginning to be detected at the age of 30 years and the intensity of deterioration increases as women age advances with a resurgence of follicular number at 40-44 years followed by a steep deterioration.*

جامعة النهرين

معهد أبحاث الاجنة وعلاج العقم

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة : امل عبد شاكر محمود

بإشراف : الاستاذة باسمه محمد عبد اللطيف الجبوري

التاريخ: 2004

### *Effect of licorice on ovulation and hormonal picture of amenorrhic women*

## SUMMARY

*The effect of licorice extract (Glycyrrhiza glabra) on the reproductive hormones and changes in the ovaries with resumption of menstrual cycle of amenorrhic women attending outpatients clinics of specialist gynecalogist in Baghdad were studied in this work. Forty patients (20-40 years) were included in this study. Licorice extract dissolved in a cup of water in a close of 2 gin/ day one hour before meal for hypogonadotropic amenorrhic women for the period of three months. Hormonal analysis of (FSH), (LI I) and (E2) serum levels were preformed before and after 1, 2 and 3 month of Licorice administration. Also ultrasound examination was done for all patients before and after Licorice administration. Results showed that there was a highly significant increase ( $p<0.001$ ) in serum FSH levels of hypogondatropic women and a significant decrease ( $p<0.005$ ) in serum LH level of all treated patients in addition to a highly significant increase ( $p<0.05$ ) in serum E: level at the end of the experiment in comparison with the pretreated values. Resumption of menstrual cycle was obvious after 3 months of treatment and ultrasound finding of fallicle of different size was obvious in comparison with the picture of quicent ovaries in the pretreated grou. These results indicate that consuming Licorice extract in a dose of 2 gp.i/day) for few months to amenorrhic women improves the reproductive hormonal status in addition to the resuming menstruation and produce structural changes in the ovaries detected by ultrasound examination. These results may open the way for farther investigation to use Licorice extract to treat other types of amenorrhea.*



جامعة النهرين

معهد أبحاث الاجنة وعلاج العقم

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة : بلسم عبد الحميد عبد المجيب محمد

بإشراف : الاستاذ الدكتور عدنان صالح الجنابي

التاريخ: 2004

*Outcome of in vitro fertilization and intra cytoplasmic sperm injection in asthenospermic infertile iraqi patients*

## SUMMARY

*Comparison between conventional in vitro fertilization and intracytoplasmic sperm injection was done in this retrospective study which was based on studying records of one hindered infertile couples. Studying the asthenospermia as a target objective of male factor infertility in cases of in vitro fertilization and intracytoplasmic sperm injection. Definition of asthenospermia is sperm motility percent less than 50% and grade of sperm activity less than grade 3.*

*The causes of female factors infertility for both groups were hyperprolactinemia, tubal factors, polycystic ovary syndrome, endometriosis and uterine factors. The age of husbands participated in this study was ranged from (22-58) years, while the age of wives was ranged from (17-44) years for both groups. The duration of infertility of couples ranged from (2-25) years for the both groups who were involved in IVF and ICSI techniques.*

*Ovulation induction was done for both groups by administration of gonadotropin releasing hormone analogue GnRH analogue (decapiptyle 3.75 mg) on cycle day 21st of the previous cycle (long luteal protocol). On cycle day two E2 should be less than 50 pg/ ml and we should role out follicular diameter more than 10 mm and endometrium thickness should be less than 3 mm (desensitization stage). The ovulation induction was performed by administration of two ampoules of human menopausal gonadotrophin (hMG) (pergonal 75 IU of FSH and 75 IU of LH*

*ampoule) started from day two of menstrual cycle continue the stimulation until when at least 3 ovarian follicles with size 17-18 mm checked ultrasonically and estradiol serum level (E2)*

*measured then human chorionic gonadotrophin (hCG ) should be injected at the dose 5000-10000 IU (hCG, profasi 5000 IU/ ampoule, Serono Company, Italy).*

*Oocyte retrieval is performed 34-36 hours post hCG injection. The results of this study showed that the fertilization rate, number of embryo obtained, number of embryo transferred were highly significant ( $p < 0.001$ ) in ICSI group. However, embryonic development rate showed a different picture, since it rose to highly significant value in IVF as compared to ICSI. Pregnancy rate showed a highly significant ( $p < 0.01$ ) increase in ICSI as compared to IVF group.*

*The significance of these results are discussed on the basis that in ICSI technique, we have much more control on fertilization than IVF and this will have also positive impact on embryonic number obtained or transferred. However, more artificial manipulation of the ova through sperm injection in ICSI could induce certain undetected embryonic damage, hence embryonic development is less in ICSI than IVF.*

جامعة النهرين

معهد أبحاث الاجنة وعلاج العقم

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة : سهير صادق محمد امين

بإشراف : الاستاذة باسمه محمد عبد اللطيف الجبوري

التاريخ : 2004

### *Classification of male infertility according to seminal changes*

## SUMMARY

*This study is an attempt to classify male infertility depending on critt of seminal changes with studying the levels of reproductive hormones and th possible effects of risk factors on the occurrence of these abnormalities. The study involved two hundred and fifty infertile men, with ages ranged between 20 and 60 years, who were attending the Institute of Embryo Research and Infertility Treatment. An average of two seminal readings, a detailed questionnaire on reproductive and health histories from each patient, and the available reproductive hormones, follicle stimulating hormone (FSH), luteinizing hormone (LH), testosterone and prolactin results, were obtained. Depending on WHO (1987) standard limit, seminal results of infertile men were classified into eight groups: oligoasthenoteratospermia (OAT), which was the most prevalent abnormality (29.2%>), azoospermia (Azoo), the second common group (26.8%), asthenoteratospermia (AT), the third common one (25.2%). The other 5 infertile groups: asthenospermia (A), teratospermia (T), oligoasthenospermia (OA), oligospermia (0), and absent ejaculation (AE), were found in low percentages. Semen volume means and the percentage of sperm agglutination were found nearly within the normal range, although, they showed highly statistically significant differences ( $P < 0.001$ ) between classified infertile groups. Furthermore, most semen samples showed infection, detected by elevated leukocytes and phagocytes concentrations above the normal limit, and there were high!}' significant differences ( $P < 0.001$ ) between phagocytes concentration means in these infertile groups*

Over half (52.4%) of infertile men in this study were of age ranged between 30 and 39 years. Azoospermic, oligoasthenospermic, and asthenospermic groups were found in higher percentage in older ages (> 50 years), and absent ejaculation group was higher in the forties, when compared with their percentages in other decades. Moreover, about 59.6% of men complained of infertility with duration ranged between 1 and 5 years, while those with long infertility duration period (> 10 years) were found in smaller percentage (14.8%). The majority of the studied patients complained of primary infertility, and azoospermic group showed a statistically significant ( $P < 0.05$ ) higher percentage in primary than in secondary type opposite to asthenospermic and teratospermic groups, which were significantly ( $P < 0.05$ ) higher in secondary infertility groups, except for azoospermic group where an observed. Also, LH concentration means were normal in all groups, except for oligoasthenospermic group where it showed mild reduction. Serum prolactin concentration means were elevated above normal levels in most infertile groups, except for oligospermic and absent ejaculation groups where it was within the normal level. On the other hand, testosterone means were within the normal range in all groups. Risk factors that had been noticed in some patients in this study were: cigarette smoking, varicocele, genitourinary infection, occupational heat exposure, postpubertal mumps, diabetes mellitus, certain medications, cryptorchidism, trauma to the genital or pelvic regions, hydrocele, alcohol drinking, inguinal hernia, chemical and radiation exposure, testicular torsion, and testicular abscess. Cigarette smoking was the most frequently found (33.6%), followed by varicocele (30%), and genitourinary tract infection. These factors could have an effect on male fertility and semen parameters. This research with other previous studies in this field may open the way for other advanced studies in the future concerning evaluation of male infertility.

جامعة النهرين

معهد أبحاث الاجنة وعلاج العقم

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة : شذى صادق صبري

بإشراف : الاستاذ الدكتور عدنان صالح الجنابي

التاريخ : 2004

## *The effect of consanguinity on fertility in Iraq*

### **SUMMARY**

*'Manage between relatives or what is called consanguineous marriage is a practice in Iraq as in other Arab and Muslim countries. This study is designed to investigate the relationship between such marriages of different degrees on fertility. A total number of 2032 couples of the general population from Baghdad province both fertile and infertile were initially included in the study to establish the prevalence of consanguineous marriage. In addition 312 infertile couples and another 312 fertile couples were also included in the study to investigate the degree of consanguinity, family history of infertility, infertility according to gender and type of infertility as well as risk factors, in addition to another information was investigated in infertile consanguineous couples, the results indicate that consanguinity rates were 37.50%, 44.20%, and 34.30% respectively. The test of association between consanguinity and infertility in the fertile and infertile consanguineous couples using Chi square revealed a significantly positive association (p value was 0.01). Concerning the type of infertility, the results showed that, infertile consanguineous couples had a high percentage of primary infertility (82.6%), concerning gender factor of infertility, male type is the most common (86.2%), family history of infertility and delay infertility was positive in (34.1%). The occupational risk factors and other risk factors in the history of those patients were (26.1%). These results clearly indicate that, the consanguineous marriages might have an association with couple infertility and the most common factor of infertility was the male factor.*

جامعة النهرين

معهد أبحاث الاجنة وعلاج العقم

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة : عالية محمد علي حسن محمد

بإشراف : الاستاذ الدكتور عدنان صالح الجنابي

التاريخ: 2004

*Physiological and social factors affecting menopause in a samle of iraqi wonen*

## SUMMARY

*The objective of the present stud) is to determine the menopausal age in a sample of Iraqi women and it's association with hormonal, physiological changes and some social habits.*

*This prospective study was conducted on 11 5 menopausal women, during the period extending from July 2003 to February 2004. The target population was women with menopausal amenorrhea for 1-5 years, whose age range between 30 to 59 years. The women were attending either the clinic of Institute of I'mbryo Research and Infertility Treatment. University of Baghdad, or other governmental hospitals and private clinic suffering from amenorrhea for diagnosis and treatment.*

*A detailed questionnaire form was tilled for each woman, the collected data included: sociodemographic data: (age. hod\ weight, educational level, and cigarette smoking). The questionnaire form also included, menstrual and reproductive characteristics (age at menarche, parity, duration and regularity of menstrual periods, the use of hormones for contraceptive purposes and hormone replacement therapy), history of vasomotor symptoms, atrophic changes, and psychological history. Hormonal assay was done for menopausal women which include (follicle stimulating hormone (f'SU). Luteinizing hormone (l.II).and Oestradiol El Ultrasonic examination was done for those women to determine, ovarian size, uterine size and endometrial thickness. the main results obtained showed that: the median of menopausal age is 47 years while the mean is  $46.23 \pm 0.46$  years, there is no significant relationship between parity, education, cigarette smoking, duration and regularity of menstrual cycle with menopausal age .*

*on the other hand there is a significant positive association between taking of contraceptive pills and late menopause. There is a significant relationship between body weight, age of menarche*

*presence of vasomotor and psychiatric symptoms, with menopausal age. but not with atrophic symptoms. Also a significant association was recorded between levels of hormone (FSH, LH and F) with menopausal age. Ultrasound investigations revealed that there is a significant relation between endometrial thickness and menopausal age but not with ovarian and uterine size.*

جامعة النهرين

معهد أبحاث الاجنة وعلاج العقم

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة : عبير علي مجيد سبع

بإشراف : الدكتور زهير عاشور كنعان

التاريخ : 2004

*The effect of treatment of seminal fluid infection and sperm agglutination on semen parameters*

## SUMMARY

*This study was performed to examine the effectiveness of a combined antibiotics (Doxycycline and metronidazole) and prednisolone therapy for the treatment of infertile patients complaining from seminal fluid infection and sperm agglutination who were attending Institute for Embryo Research and Infertility Treatment at Teaching Hospital of Baghdad University and at a private clinic. The seminal fluid samples of thirty-eight infertile men were investigated and another 20 semen samples from fertile male as a control group. Sperm parameters include sperm motility percentage, grade of activity, motility index were significantly reduced with seminal fluid infection and sperm agglutination while there was increase in percentage of sperm agglutination, shaky head movement, phagocyte and leukocyte concentrations. The combination use of antibiotics (Doxycycline 100 mg/twice daily plus Metronidazole tab. 500 mg twice daily for two weeks) followed by prednisolone tab 5 mg three times daily for two weeks followed by 5 mg/twice daily for three days and finally one tablet day for another three days. Followed by rest for five days then repeat the course of treatment three more times. This regimen was effective significantly in improvement of sperm motility, grade activity and motility index. Also there were significant improvement in semen volume and total sperm count. The sperm agglutination, sperm shaky head movement, leukocyte and phagocytes concentrations were significantly reduced after the treatment of seminal fluid infection and sperm agglutination. Positive significant correlation was found between sperm agglutination and sperm shaky head movement. This regimen was found to be safe, efficient with no side effect for the treatment of infertile patients with seminal fluid infection and sperm agglutination.*



جامعة النهرين

معهد أبحاث الاجنة وعلاج العقم

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة : هديل اسماعيل ابراهيم عبد الرزاق

بإشراف : الاستاذ المساعد الدكتور سعد صالح الدجيلي

التاريخ : 2004

### *Comparison of two methods of assessment leukocytospermia in infertile men*

## SUMMARY

*The aim of the present study is to compare the two methods used to differentiate between white blood cells and other round cells of semen samples before and following in vitro activation using simple layer technique. The study include one hundred and twenty of Iraqi men, their ages ranged between 22-64 years old. Seminal fluid analysis was done for all subjects to estimate the leukocytes by high power field (HPF) and divided the subjects according to semen characters into 6 male factor infertility groups (Azoospermia, Oligospermia, Asthenospermia, Asthenoteratospermia, Teratospermia, oligoasthenoteratospermia). Endtz and o-Toluidin methods were performed to detect the leukocyte concentration (m/ml) in the semen of infertile and fertile patients. Result of the study reveal that o-Toluidin method shows a significant decrease in the leukocyte concentration compared with HPF method ( $P < 0.01$ ) and Endtz method ( $P < 0.05$ ). The number of leukocytes that detected by HPF method was significantly ( $P < 0.01$ ) higher than Endtz method. Using Endtz method, the results of leukocyte concentration in all the semen of male infertility groups were significantly ( $P < 0.05$ ) higher than the result obtained by using o-toluidine method. A significant ( $P < 0.05$ ) increase was observed in leukocyte concentration of teratospermic ( $6.6 \pm 1.1$ ) and asthenoteratospermic ( $5.1 \pm 1.0$ ) patients compared to other groups. The mean of leukocyte concentration in the samples of 20 patients using HPF reveal a significant increase ( $P < 0.01$ ) compared to Endtz method. However, following 10 minutes of simple layer technique performance, there was a highly significant ( $P < 0.001$ ) reduction in the number of leukocyte compared to the results before activation when detected by Endtz method. The mean of*

*leukocyte concentration was significantly ( $P<0.05$ ) elevated following 30 minutes of in vitro activation technique compared to the*

*activation period of 10 minutes. It is concluded from the result of the present study that the comparison between the Endtz and o-Toluidin methods to detect the leukocytospermia reveal that both methods are effective, easy to perform, cost low and can obtain a correct treatment following correct diagnosis. However, Endtz method shows more accuracy and requires a less period of time.*

جامعة النهرين

معهد أبحاث الاجنة وعلاج العقم

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحث : علي عبد الحسين شنان ابراهيم

بإشراف : الدكتور زهير عاشور كنعان

التاريخ : 2004

*Effect of Age on fertilization and embryonic development after intracytoplasmic injection of testicular spermatozoa in the treatment of non-obstructive azoospermia*

## SUMMARY

*The objective of the present retrospective study is to evaluate the effect of male and female age on the fertilization rate and embryonic development rate after TESE- ICSI procedures for treatment of non-obstructive azoospermia. The clinical significance of hormonal profile and open diagnostic testicular biopsy as a static and prognostic predictors in the treatment of non-obstructive azoospermia is another aim of this work.*

*The work was carried out in the High Institute for Embryo Research and Infertility Treatment / Baghdad University through a period from March 2001 to March 2003.*

*Forty-nine azoospermic patients were involved in the present study, their wives were normally ovulating without any female infertility factor. Open diagnostic testicular biopsies were performed for all patients and the histological findings classified into normal spermatogenesis (NS), hypospermatogenesis (HS), maturation arrest with focal spermatogenesis (MAFS), classical maturation arrest (CMA), Sertoli cell only with focal spermatogenesis (SCOFS), and classical Sertoli cell only (CSCO). Testicular sperm extraction (TESE) for intracytoplasmic injection (ICSI) was successful in 26 patients (53.1 %). The 26 patients were grouped according to age into four groups; < 30 years (7 patients), 31 - 40 years (5 patients), 41 - 50 years (8 patients), and > 50 years (6 patients). The result of ICSI was studied in each group. For studying the effect of the female age, the data were grouped into four < 25 years (3 patients), 26 - 30 years (10 patients), 31 - 39 years (9), and > 40 years (4 patients). Mature spermatozoa were found during histological examination in all with NS, MAFS, and SCOFS patterns, while in patients with CMA and CSCO patterns no sperm was found. The mean concentrations of FSH in patients with NS, CMA, and CSCO were*

*significantly higher ( $p < 0.05$ ) than that in NS,MAFS and SCOFs. there was strong negative correlation between increasing male age and ion rate ( $r = - 0.922$ ) at significance level of  $P < 0.05$ , while male age had Sect on the embryonic development rate.he number of developed follicle ( $>10\text{mm}$  in diameter on the day of hCG or a day before) per cycle in group I ( $< 25$  years) is significantly higher ) than that in group IV ( $> 40$  years).*

*Estradiol concentrations (E2) on the day of hCG injection or a day before in group I were higher ( $P<0.05$ ) than in group IV. he number of fertilized oocytes and the number of developed embryos per ■ group I were significantly higher ( $P<0.05$ ) than that in group IV. There was strong negative correlation ( $r = - 0.969$ ) between increasing age female and fertilization rate at significance of  $P< 0.05$ . There was strong negative correlation ( $r = - 0.907$ ) between the female age embryonic development rate at significance level of  $P< 0.05$ . This work proved that female and male age affect fertilization rate and 'onic development rate*

جامعة النهرين

معهد أبحاث الاجنة وعلاج العقم

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة : نهال نونيل ايوب جبري

بإشراف : الاستاذة باسمه محمد عبد اللطيف الجبوري

الدكتورة : سميرة سالم

التاريخ : 2005

### *Classification of female infertility in iraq.*

## SUMMARY

*This study is an attempt to determine the causes of infertility in a sample of Iraqi women and to provide some of the data essential to planning, implementation and evaluation of the services for prevention, control and treatment of infertility in Iraq. A total of 360 infertile women were evaluated in the study with ages ranged between 16 and 44 years. These women were selected randomly from couples attending the Institute of Embryo Research and Infertility treatment/ University of Baghdad (140 females) and Kamal Al-Samarai Hospital, Fertility and IVF Center (220 females) during the period from July 2002 to July 2004. Evaluation of each female was done depending on a detailed questionnaire of reproductive and health histories, physical examination and investigations including hormonal assays; TSH, T4 and PRL in all women, FSH and LH in oligomenorrhic and amenorrhic women and androgen in hirsute women.. The available ovulation documentation tests were recorded either mid luteal phase progesterone, sonographic follow up of the follicle or endometrial biopsy. Tubo-uterine evaluation test by HSG or laparoscopy if available was reported and post coital test also. Results revealed that (69.4%) of infertile women were with primary infertility while (36.6%) were with secondary infertility. It was found that about half of the female with primary infertility aged between 21-30 years and more than the half with secondary infertility aged between 31-40 years. Most of infertility cases regardless of the type of infertility were presented with less than 6 years duration. The most common factor of infertility was ovarian factor (50.6%) which occurred more as primary infertility (53%), followed by tubal factor (23.1%) which presented mainly as secondary infertility. The other causes were uterine factor (8.1), cervical factor (3.1%), endometriosis (2.7%) and unexplained infertility in 12.4% of the cases studied. Anovulatory cycle was found to be the commonest ovarian factor of infertility (20.3%) followed by hyperprolactinaemia in (13.9%) and PCOS in (12.2%) while PID was the commonest tubal factor of infertility (10.6%) followed by*

*post ectopic tubal blockage in (4.4%) of the cases studied. Uterine fibroid was the commonest pathological cause in uterine factor of infertility (5.7%). It was found that more than one third of cervical factor infertility cases were presented with more than ten years duration.*

جامعة النهرين

معهد أبحاث الاجنة وعلاج العقم

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة : هديل عبد الاله ابراهيم سعيد

بإشراف : الاستاذة باسمه محمد عبد اللطيف الجبوري

التاريخ : 2005

### *Serum biochemical changes associated with men infertility*

## SUMMARY

*Investigation of certain biochemical constituents of serum in some male patients attending infertility clinics may throw some light on the etiology of their problems. Since certain substances known as trace elements such as zinc, copper and magnesium play an essential role in spermatogenesis and fertility, which act independently or together on human sperm metabolism and nutrition; and as these substances are often found in complex with proteins like albumin, ceruloplasmin and others, so in order to detect the correlation between these elements and spermatogenesis, sperm viability and motility, this study was conducted. Serum and semen samples were collected from 120 patients with age ranged (20-50years) attending the High Institute for Embryo Research and Infertility Treatment/ Baghdad University, in addition to thirty fertile males (as control) their age comparable to that of patients. The period of this study was from June 2004 until the end of October 2004. Routine seminal fluid analysis was done and the result of seminal fluid analysis of all infertile males was divided according to WHO,(1999)limit into four groups: Asthenospermia(A), Asthenoteratospermia(AT), Oligoasthenoteratospermia(OAT) and Azoospermia(Azoo), each group includes thirty patient. The serum samples were analyzed for zinc, copper, magnesium, total protein, albumin and ceruloplasmin. Results showed highly significant decrease ( $P<0.01$ ) in serum zinc concentration in different infertile groups compared to control group. There is a slight not significant increase ( $P>0.05$ ) in serum copper concentration in different infertile groups when compared to control group. Highly significant decrease ( $P<0.01$ ) was noticed in serum magnesium concentrations in OAT group and a significant decrease ( $P<0.05$ ) in serum magnesium concentrations in AT and*

*Azoo groups in comparison with the control group. Concerning the serum ceruloplasmin concentrations, only OAT group showed highly significant decrease ( $P<0.01$ ) compared to control group. All the infertile groups showed insignificant decreased ( $p>0.05$ ) in serum albumin when compared with the control group. A highly significant decrease ( $P<0.01$ ) in serum total protein concentrations in Azoo group and a significant decrease ( $P<0.05$ ) in serum total protein in AT group were found when compared to control group. Concerning the age of infertile men, higher percentage (44.2%) of 120 infertile men ranged between 30 and 39 years followed by (30 %) of those ranged between 40 and 49 years and the lowest percentage (25.8%) of 120 infertile men ranged between 20 and 29 years of age, and azoospermia was found in higher percentage (29%) at the age of twenties when compared with their percentage in other decades, the OAT and AT were found in higher percentage (28.3%) at the age of thirties, while the A was found in higher percentage (30.6%) at the age of forties, when compared with their percentage of other decades. Results of the duration of infertility, about 55.8 % of patients had infertility duration between 1 and 5 years, this percentage decreased with increasing infertility years. A, OAT and Azoo groups had highly percentage in the first five years. No correlation was found between the duration of infertility and the concentration of all biochemical parameters. It was concluded that such parameters depend on people nutritional status. Reduction of these biochemical parameters could be related to the poor nutritional status resulted from the economic sanction imposed on our country for several years something that contributed to the increase of the probability of infertility. On the basis of the findings of this study and those of other reports, zinc and other studied biochemical parameters may contribute to fertility through its direct effect on spermatogenesis.*



جامعة النهرين

معهد أبحاث الاجنة وعلاج العقم

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة : هديل غازي رفعت بكر

بإشراف : الاستاذ المساعد الدكتور سعد صالح الدجيلي

التاريخ: 2005

### *Effect of de-penicillamin on in vitro sperm activation*

## SUMMARY

*The objective of the present study was to investigate the possibility of using DL-penicillamine for in vitro activation of normospermic and asthenospermic semen. One hundred thirty patients were involved in this study. Three concentrations of DL-penicillamine were tried (0.75, 1.5 and 3µg/ml of culture medium). Wash and spin technique was used for sperm activation in vitro, with incubation period of 10, 30 and 60 minutes at 37°C. The comparison between all groups was based on the semen sample before and after activation with sperm preparation medium or normal saline alone or supplemented with DL-penicillamine. The result indicated that DL-penicillamine added showed a positive effect on most sperm parameters studied. Best positive results were obtained using 1.5µg DL-penicillamine /ml of sperm preparation medium on sperm function parameters. In normospermic semen a highly significant ( $P<0.001$ ) increase in the percentage of sperm active motility of forward progressive movement of both class a and class a+b were observed after different activation periods compared to before activation time (37.7% versus 62.5% and 66.9% for class a after 30 and 60 minutes respectively) and (58.76% versus 84.5% and 87.3% for class a+b after 30 and 60 minutes respectively). Statistically significant ( $P<0.05$ ) increase in the degree of sperm grade activity type a was observed after 60 minutes (66.9%) incubation time when compared to 10 minutes activation time (62.5%). A significant ( $P<0.05$ ) differences in grade activity of forward progressive movement class a+b were found between different activation periods. In asthenospermic semen the grade activity of*

*forward progressive movement class (a) and (a+b) after different activation period was significantly ( $P<0.001$ ) higher than before activation class a (14.21% versus 47.4% and 62.7%*

*after 30 and 60 minutes respectively ), ( class a+b 30.79% versus 74.3% and 84.6% after 30 and 60 minutes respectively). Statistically significant ( $P<0.05$ ) different were only noted in class (a+b) between different activation periods there was a significant reduction in the concentration of spermatozoa in both control and treatment groups, with clear improvement in percentage of morphologically normal sperm in treatment group compared to control one but no significant differences was observed between the three activation periods following the addition of DL-penicillamine. These results were attributed to the fact that, DL-penicillamine was a chelating agent that considered an effective chelator of zinc .Liberation of zinc from sperms environment result in a significant improvement of human sperm motility. It was concluded from the present study that addition of DL-penicillamine to the normospermic and asthenospermic semen samples enhance certain sperm functions following in vitro activation.*

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معهد أبحاث الاجنة وعلاج العقم

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة : هند سمران حسين ياسين

بإشراف : الاستاذة باسمه محمد عبد اللطيف الجبوري

الاستاذ المساعد الدكتور انسام علاء الدين

التاريخ : 2005

*Effect of licorice administration on reproductive hormones and certain biochemical aspects of semen in infertile patients*

# SUMMARY

*The objective of the present study was to investigate the effect of low doses of Licorice on semen quality, quantity as well as hormonal milieu in a group of oligo-asthenospermic infertile men. Twenty patients with an average age (20-40years) were involved in this study, divided into two equal groups. The first group was given 500-mg/ day Licorice while the other group was given 1000mg/day for three consecutive months. General semen analysis was done before treatment and after every two weeks, while hormonal analysis for FSH, LH, estrogen and testosterone were done monthly. Seminal plasma biochemical study including carnitine, fructose and cholesterol levels were done pre and post treatment with licorice. The results indicated that Licorice consumption had got a positive effect on most of the semen parameters studied. Best positive results were obtained at a dose of 500 mg licorice /day, namely an increase in the sperm motility, concentration and to a lesser extent ejaculatory volume. In addition to that, there was a significant increase in estrogen level in blood sample as well as FSH hormone. On the other hand, testosterone and LH hormone showed a decrease in their levels in blood, although it was not significant. The biochemical contents like Carnitine, Fructose and cholesterol showed less marked changes in their levels in seminal plasma after Licorice consumption. However, low dose licorice showed better results than higher doses. These results were attributed to the effect of various components of Licorice especially the anti-oxidant substances, estrogenic substances together with various proteins, amino acids, vitamins and trace elements present in licorice. It was concluded from the results of the present study that low dose of licorice (500 mg or less)*

*given orally for a short period (less than 6 weeks) will give better results on infertile men with oligospermia or asthenospermia or both.*

جامعة النهرين

معهد أبحاث الاجنة وعلاج العقم

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحث : احمد محمد حسن عبدالله

بإشراف : الاستاذ الدكتور عدنان صالح الجنابي

المدرس الدكتور زهير كنعان

التاريخ: 2005

*Effect of anabolic-androgenic steroids on sperm quality and serum levels of hormones and certain biochemical parameters in iraqi male bodybuilders*

## SUMMARY

*In this preliminary study, the influence of administration of anabolic androgenic steroids on the male reproductive health and certain serum clinical biochemical parameters were investigated. Twenty four male bodybuilders were included in the study. Subjects participated in the study responded to an advertisement fixed in a local bodybuilding and fitness gym in Al-adhamiya district (Baghdad). The history of anabolic androgenic steroids administration (AAS group) was recorded for 16 subjects (age =  $21 \pm 1.6$  years), while 8 subjects exercised only without AAS use (age =  $21.2 \pm 0.8$  years) and served as control group. All subjects of AAS group were asked to cease using AAS before being enrolled in the study. A sheet containing detailed questionnaire was completed for each subject. Subjects of both groups were asked to visit the clinic (subsequent visits) for clinical evaluation of their health together with semen analysis. Blood was collected to determine serum hormonal and biochemical changes. Changes within the same group and between both AAS and control groups were compared. Results indicated that 50% of AAS users were young adult, their age ranged between 20 to 24 years. There was a significantly higher mean body weight in AAS group than in the control group ( $P < 0.05$ ). Also pulse rate and systolic blood pressure were significantly high in the control group as compared to AAS group. Results of semen analysis indicated that, the use of AAS resulted in impairment of spermatogenesis*

*probably due to AAS-induced transient and reversible hypogonadotropic hypogonadism. Thus, sperm concentration and total sperm count increased significantly ( $P < 0.05$ ) within both AAS*

*and controgroups during the period of cessation, however, these parameters remained significantly low ( $P < 0.05$ ) in AAS group in comparison with the control group. Sperm agglutination increased significantly within AAS group ( $P < 0.05$ ). Both sperm agglutination and round cells increased significantly ( $P < 0.05$ ) in AAS group as compared with the control group. Likewise gonadotropins: follicle-stimulating hormone (FSH) and luteinizing hormone (LH) in AAS group increased significantly ( $P < 0.05$ ) 12 weeks after cessation of AAS as compared to baseline. Although prolactin level was within normal range in AAS group, it was significantly low ( $P < 0.05$ ) in AAS group as compared to the control group. There was a significant decrease in the levels of alanine aminotransferase (ALT) and alkaline phosphatase in AAS group ( $P < 0.05$ ) but not in aspartate aminotransferase (AST) 12 weeks after cessation of AAS as compared to baseline. However, activity of these three enzymes were significantly high ( $P < 0.05$ ) in AAS group as compared to the control group. Concerning lipid profile, high density lipoprotein-cholesterol (HDL-C), triglycerides and very low density lipoprotein-cholesterol (VLDL-C) decreased significantly ( $P < 0.05$ ) in AAS group 12 weeks after cessation of AAS as compared to baseline. There was a non significant increase in the level of total cholesterol, while low density lipoprotein-cholesterol (LDL-C) has increased significantly ( $P < 0.05$ ) in AAS group 12 weeks after cessation of AAS as compared to baseline. Level of HDL-C was significantly high ( $P < 0.05$ ) in AAS group as compared to the control group while, total cholesterol, triglycerides, VLDL-C and LDL-C were significantly low ( $P < 0.05$ ) in AAS group as compared to the control group. These findings collectively indicated that, the use of AAS drugs have an ill effect on the general health of the users in addition to a profound effects on the reproductive functions. This study also have opened the road for further studies in Iraq concerned with the abuse of anabolic steroids which may constitute on the long run a major source of health and social problems*

جامعة النهرين

معهد أبحاث الاجنة وعلاج العقم

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحث : ابراهيم جاسم حمادي عباس

بإشراف : المدرس الدكتور زهير كنعان

التاريخ : 2005

*The effect of using Vitamin C tablets on infertility treatment in male*

## SUMMARY

*The effect of vitamin C (ascorbic acid) on seminal fluid parameters of men with abnormal seminal fluid analysis is studied. The study was applied on 32 men whose ages ranged between 25-45 years ( $\pm 5.92$ ) and it was conducted at Al-Escandaria general hospital between June 2004 and February 2005. Vitamin C (ascorbic acid) was given in a dose of 500 mg/ day (250mg twice daily) after meal for men with abnormal seminal fluid analysis for the period of three months. The seminal fluid analysis was performed before and after 1st, 2nd and 3rd month of vitamin C. Results showed that, there was a highly significant improvement of the parameters of the abnormal semen (except for the pH), in volume, viscosity, count, motility and grade motility, abnormal form, agglutination, and leukocyte. The improvement is more significant after 2nd and 3rd month of treatment than after the 1st month of treatment. These results indicate that consuming vitamin C in a dose of 500 mg/day) for three months to men with abnormal seminal fluid improves its parameter. These results may open the way for further investigation to use of vitamin C to improve their seminal fluid parameters and yet their fertility*

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معهد أبحاث الاجنة وعلاج العقم

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة : اديبة حسين عباس علي

بإشراف : الاستاذ المساعد الدكتور سعد صالح الدجيلي

التاريخ: 2005

*Evaluation of post coital test at different preovulatory cycle days for intra uterine insemination*

# SUMMARY

*The aim of the present study is to evaluate and determine the effect of post coital test (PCT) and use acceptable results for Intra-uterine insemination(IUI) as a treatment . Eighty patients are involved in this study. PCT is performed for women in preovulatory days, (CD<sub>12</sub>,CD<sub>13</sub> and CD<sub>14</sub>). Through these menstrual cycle days, the women are examined at different intervals of hours and sub-grouped into :- 1-3 hrs,4-6 hrs and > 6hrs groups. Sperm – Cervical mucus interaction test is performed for women showed twice negative PCT result. The female had been assessed for different tests at the same day of PCT, including assessment of estradiol hormone(E<sub>2</sub>) and vaginal U/S for the size of Graafian follicle and endometrial thickness .Sperm preparation technique of 29 men is performed for IUI.*

*There is no significant(P>0.05) difference in the total cervical score between different intervals of +ve PCT women or different intervals of –ve PCT women following 1-3hrs of coitus. There is a significant ( P < 0.05) difference in the total sperm count when PCT is done at CD<sub>13</sub> for women following 1-3hrs ( 13.5 ± 2.06) compared to 4-6hrs ( 21.00± 3.52 ) and > 6hrs intervals (19.25 ± 6.93 ) . Sperm motility percentage following 1-3hrs, 4-6hrs and >6hrs of coitus show no statistical significant difference(P>0.05). In CD<sub>14</sub>, there is a significant ( P < 0.05 ) difference in total sperm count following, 4-6hrs ( 11.00 ± 1.00 ) compared to 1-3hrs (15.66 ± 5.20) and > 6hrs (18.50 ± 1.50) .There is a significant (P<0.05) difference in the total pregnancy rate (PR) of –ve and +ve PCT women between IUI and natural coitus women. The total results of PR for –ve PCT women after IUI and natural coitus 27.7% ( 5/18) is a*



*significant ( $P < 0.01$ ) difference compared to +ve PCT women 37.9% (11/29) .The result of the present study reveal that –ve pct oman can get pregnancy by IUI or natural coitus .Thus, it concludes that PCT is a fundamental diagnostic test to provide information regarding coital picture , quality of cervical mucus interaction alone or with sperm either invitro or invivo and indirectly it indicates the ovarian function. Thus consequently, PCT may positively effect the PR following IUI and natural coitus. Therefore , PCT is required in ART centers to be one of main diagnostic test of infertility and methods of treatment .*

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معهد أبحاث الاجنة وعلاج العقم

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة : أماني فريد نعوم رزوق

بإشراف : الاستاذ الدكتور عدنان صالح الجنابي

التاريخ: 2005

*effect of dealing with lead on male infertility*

## SUMMARY

*This study is an attempt to detect if there is any relation between the male infertility and the working in factories dealing with lead. The workers of Babel Factory tor Battery in Al- Waziria, Baghdad were chosen randomly as the studied exposed group (n=36).*

*Unexposed (control) group are those subjects who are away from occunational exnosure i.e. teachers, neasants. civil workers, and others (N = 20). The age range of those persons is (25 -55). The period of the work. Extended from September 2004 till ganuary 2005 .*

*A detailed questionnaire was conducted on their age, weight, marital status, fertility state, medical and surgical histories, along with their social habits regarding smoking, drinking and other addiction. After the filling of the forms, both groups were undergoing special investigations in order to check the degree of their exposure to lead, which was done in the Toxicology Center m the specific surgical hospital. The biochemical and hematological investigations were also done there. Hormonal and semen parameters were analyzed m the Institute of Embryo Research and Infertility Treatment.*

*A statistical analysis of the data obtained was done using the S P S S computer program in order to get the point of significance regarding the relation between the exposure to lead and male infertility. The results cleared that there is a significant relation between the blood lead level and the differer semen parameters. Tins was shown as a decrease in semen concentration, semen motility, grade activity and motility index. Beside these results, it was also shown that lead has a*

*direct insult on the testicular production of the steroid hormone (testosterone), the main male*

*hormone, as well as there may be some sort of pituitary effect. This is a clear finding in those subjects who are infertile and exposed to lead, occupational!). From the results obtained, we concluded that men working in battery factories are exposed to high risk of infertility due to the exposure to lead. Suggestions about the prevention of this effect include the attention by authorities in charge of the factories to the occupational hazards on the reproductive health. In addition to that, checking lead level in blood and semen plasma for each male complaining of unexplained infertility and all other staff of a factory.*

جامعة النهرين

معهد أبحاث الاجنة وعلاج العقم

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة : رحيمة صالح عبد الميدي

بإشراف : الاستاذ المساعد الدكتور سعد صالح الدجيلي

التاريخ : 2005

***Effect of pentoxifylline (Trental®) on human sperm in vitro activation of asthenospermic infertile patients***

# SUMMARY

*The objective of this study is to improve sperm function parameters in vitro using motility stimulant pentoxifylline (Trental)® for asthenospermic patients samples. Forty one asthenospermic semen samples were involved in the current study. Certain sperm function parameters were examined before and following in vitro wash and spin activation technique using normal saline (N.S.) alone, sperm preparation medium (SPM) alone or compared to the addition of different concentration of prepared pentoxifylline (0.25, 0.5, 1 mg/ml NS or SPM) and different activation periods 10, 30, 60 minutes. The results revealed a significant ( $P < 0.05$ ) increase in the percentage of sperm motility, grade of forward progressive movement and the percentage of morphologically normal sperm (MNS) of asthenospermic semen between before and after 30 and 60 minutes of activation using normal saline alone or using SPM alone. The addition of 0.25 mg of pentoxifylline /ml N.S. or SPM. There was a highly significant increase ( $P < 0.001$ ) in sperm motility percentage, grade forward progressive movement and morphologically normal sperm percentage when 0.25 mg and 0.5 mg/ml pentoxiphylline with N. S. or SPM after incubation period of 10, 30, 60 minutes from .before activation. Also there was a highly significant ( $P < 0.01$ ) decrease in sperm motility, the grade activity and MNS when 1 mg pentoxifylline /ml N.S. or SPM was used for in vitro activation following 10, 30, 60 minutes of incubation compared to before activation. Best improvement of certain sperm function character was observed following taddition of 0.5mg of pentoxifylline /ml SPM to asthenospermic samples and incubation for 30 minutes following in vitro activation technique. Thus, it was concluded from the results of this work that the addition of prepared pentoxifylline (Trental)\* to NS or SPM*

*of asthenospermic patients semen will improve certain sperm function parameters. This result can be utilized in future for IUI and IVF to achieve high pregnancy rate of asthenospermic patients .*

جامعة النهرين

معهد أبحاث الاجنة وعلاج العقم

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة : ليلى عبد الحميد احمد محمد

بإشراف : الاستاذ الدكتور عدنان صالح الجنابي

التاريخ: 2005

### *The use of certain herbs to improve semen quality*

## SUMMARY

*The study was conducted with the aim of investigating the androgenic effects of zingiber officinale (ginger) plant .To fulfill this aim a preparatory trial was done (experiment I) on experimental animal (immature male mice) before testing the substance on infertile men (experiment II) complaining from oligospermia ,asthenospermia and teratospermia during their attendance the institute for Embryo Research and Infertility treatment ,Baghdad university .The period of the study extended from April to September ,2004.In experiment I, ginger aqueous extract was administered orally and daily to 32 immature mice on day 35 of age at two dose levels: 35mg (group A) and 47mg /100g b.w.( group B) ,as each group contain 16 mice. Mice of same age that received distilled water served as control (n=16). Animals were sacrificed on following day's post- treatment: 7,14,21 and 28of sub groups:wk1,wk2,wk3 • and wk4 respectively. Results showed that a significant increase ( $p<0.01$ ) in body weight in all subgroups of group B and also showed a significant increase ( $p<0.05$ ) in subgroup 4 of group A. The weight of certain organs of the reproductive system viz.: testis, epididymis and seminal vesicle also showed a significant increase ( $p<0.001$ ,  $p<0.001$  and  $p<0.05$ ) for these organs respectively in all subgroups of group B as compared to group A and the control .Changes in epididymal sperms included a significant increase( $p<0.05$ ) in sperm concentration (SC) and (PO.001) percent of motile sperm (MS) in all subgroups of group B mice. Percentage of abnormal sperm morphology (AbS) showed a highly significant decrease ( $p<0.001$ ) in all subgroups of GB group as compared to group A and to control group.*

*Structural changes in the reproductive system of treated mice included a significant*

*increas( $p<0.01$ ) in the diameter of seminiferous tubules in animals of group B in comparison*

*with group A and the control, associated with appearance of completely formed free sperm in their lumen in group B and magnitude of the effect increased gradually with time .*

*In experiment II of the study, several concentration of ginger powder was tried in infertile men( $n=30$ ): 0.5, and 2 g/day for three months period (number of patient/group: I, Hand III =10). Results of this experiment revealed that highest ginger concentration (2g/'day) caused a significant increase ( $p<0.05$ ) in SC and in SM (PO.001). While a significant decreas( $p<0.05$ ) in the percent of AbS in group II after three month of treatment and the decrease in this parameter become highly significant ( $p<0.001$ ) throughout the period of the drug administration in GUI patients. Hormonal analysis of the serum blood of these patients showed a significant ( $p<0.05$ ) increase in FSH and testosterone levels in all patients of group GUI at the end of the third month post treatment .The level of LH hormone, showed an entirety different pattern, since it's level decreased significantly ( $p<0.05$ ) in the patients of the same group (GUI) and also at the end of the third month of treatment. These results indicated that ginger administered initially to experimental animal mice and later to infertile men caused clear stimulation of the activity of male reproductive system manifested by reproductive organ weight, sperm parameters and associated hormonal changed. These changes may have been brought about by the androgenic property of the plant acting locally on the reproductive system or centrally by acting through the hypothalamic-pituitary -gonadal axis.*

جامعة النهرين

معهد أبحاث الاجنة وعلاج العقم

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة : مها هادي حمود سعيد

بإشراف : المدرس الدكتور زهير كنعان

التاريخ: 2005

*The effect of using tomixafen in male infertility treatment in male.*

## SUMMARY

*Infertility is one of the most critical social problems in the world. In our society, male infertility is considered as a big problem. For this reason, this study was conducted in order to open a point of hope for those who are infertile and aim to father a child. The objective of this study is to investigate the effect of tamoxifen on semen quality and quantity in a group of infertile male patients. Forty infertile patients complaining from oligospermia, asthenospermia and teratospermia were involved in this study during there attendance at Al-Hilla Teaching Hospital. The period of study was from April 2004 to July 2004. Tamoxifen is administered orally at concentration of 20mg/day as a tablet for three months. One hundred sixty seminal fluid samples were examined macroscopically and microscopically before and after the treatments (for each patient, a pre- treatment semen sample was analyzed and then three samples were analyzed each month with the treatment course). The samples were analyzed for the semen concentration, sperm motility and sperm morphology. After analyzing the data and results obtained from the study, there was significant increase in the total sperm out put per ejaculate and sperm concentration after 3 months of therapy. In regard to the sperm motility and sperm morphology, no statistical significant were obtained. Although none of the men impregnated their wives during the study there is no doubt that Tamoxifen is a useful drug in the treatment of oligospermia.*



جامعة النهرين

معهد أبحاث الاجنة وعلاج العقم

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة : ميسون عبد الجليل زيارة حسن

بإشراف : الاستاذ الدكتور عدنان صالح الجنابي

التاريخ: 2005

### *Biochemical changes associated with regulated cycle iraqi women*

## SUMMARY

*The present study was conducted to investigate the biochemical and hematological changes occurring in women subjected to three ovulation induction protocols. Ninety female patients were involved in the study, which extended from June to November, 2004. Their age ranged from 20 to 46 years, their body mass index (BMI) ranged from 20 to 44.8 kg/m<sup>2</sup>, and the duration of infertility was from one to 16 years. The number of previous treated cycles ranged from 2 to 36 for clomiphene citrate (CC), one to 36 for human menopausal gonadotropin (hMG) and human chorionic gonadotropin (hCG). The social, medical, and reproductive history of all patients was available. Hormonal profiles were documented. For all patients, the following hormones were determined on cycle day two: follicle-stimulating hormone (FSH), luteinizing hormone (LH), prolactin (PRL), and estradiol (E<sub>2</sub>). Also, their baseline ultrasonic (U/S) examination was performed. The patients were subjected to one of the following three ovulation induction protocols:-In protocol A, CC alone was administered (100mg per day) starting on day three of cycle and continued for five consecutive days. In protocol B, CC and hMG was administered, hMG was given for five days at a dose of 75 or 150 IU (depending on the patient's need and ovarian response). In the third protocol (protocol C), hMG alone was administered (same dose) from cycle day three and was continued daily till day seven of the cycle. In all these protocols, ovulation was induced by injection of hCG at a dose of 5000 to 10000 IU, hCG was administered when U/S examination revealed one or at the most two dominant follicles (17 to 18 mm in diameter). Ovulation induction verification was based on serial serum E<sub>2</sub> levels measurements, supplemented by serial U/S monitoring and midluteal progesterone (P) levels measurements. The blood*

*biochemical and hematological tests were performed in two occasions: first, on cycle day two which was considered as (preovulation) and second, on any day in which ovulation is detected sonographically and considered as (postovulation).*

*Results of this study in relation to comparing changes postovulation with preovulation indicated that, values of serum alkaline phosphatase (S. ALP) activity and serum total protein (S.T.P.) decreased significantly ( $P<0.05$ ) in protocol A postovulation as compared to preovulation. A significant increase ( $P<0.05$ ) in S.T.P. and a significant decrease ( $P<0.05$ ) in hemoglobin concentration (Hb conc.) in protocol B in postovulation as compared to preovulation. When the biochemical and hematological changes were compared between the protocols, results indicated that the serum aspartate transaminase (S.AST) increased significantly ( $P<0.05$ ) in protocol C as compared to A and serum total cholesterol (S.T.Chol.) increased significantly ( $P<0.05$ ) in protocol C as compared to B, and a significant decrease ( $P<0.05$ ) in S.T.P. in protocol C as compared to A. These results indicated that the aspects of biochemical and hematological changes associated with different protocols of ovulation induction are not widely investigated and more attention by the concerned specialists should be paid to it in order to check whether any health harmful effect may be induced.*

جامعة النهرين

معهد أبحاث الاجنة وعلاج العقم

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة : نادية خليل اسماعيل غفوري

بإشراف : الاستاذ الدكتور عدنان صالح الجنابي

التاريخ : 2005

*Effecs of calicum chloride and zince chloride on sperm functions in asthenospermic men in vitro .*

## SUMMARY

*The study was conducted with the aim of investigating the effect of calcium chloride (CaCl<sub>2</sub>) and zinc chloride (ZnCl<sub>2</sub>) addition to activate semen of infertile patients (asthenospermic) attending the High Institute for Embryo Research and Infertility Treatment (n = 120 patients). The patients were divided into 2 groups, group I (n = 60 patients) had CaCl<sub>2</sub> added to their semen, while patients of group II (n = 60 patients) had ZnCl<sub>2</sub> tested on their semen. The period of the study extended from May to October 2004. Several concentrations of these chemicals were tried, 0.11, 0.22 and 0.44 mM/L for CaCl<sub>2</sub> and 0.18, 0.36 and 0.74 mM/L for ZnCl<sub>2</sub>. Stock solutions of these chemicals were tested along with an addition of either normal saline (NS) or in vitro fertilization (IVF) media. These concentrations were tried on semen of 80 patients, 40 for each chemical with NS media and 40 patients, 20 for each chemical with the addition of IVF media using simple layering swim up activation technique. The prepared media were tested on the following parameters: Motility, grade of activity, percentage of abnormality and agglutination% after incubation for: 15, 30 and 45 minutes. Results showed that addition of NS to different concentrations of the two chemicals failed to induce significant changes in all these parameters. Results also showed that the percentage of sperm motility (SM) and grade of activity (GA) was significantly increased ( $P < 0.05$ ) when 0.11 mM/L concentration of CaCl<sub>2</sub> was used with IVF media incubated for 15 minutes as compared to the control (IVF media alone without CaCl<sub>2</sub>). The magnitude of the increase was more prominent with the prolongation of the incubation period from 15 minutes to 30 minutes and 45 minutes, while using CaCl<sub>2</sub> of 0.44 mM/L*

*concentration caused a significant ( $P < 0.05$ ) decrease in SM and GA and this decrease was also significant with the prolongation in the incubation period. Sperm hyperactivity (HA) was the other sperm parameter studied which seemed to be increased very markedly in all concentrations of  $\text{CaCl}_2$  used with IVF media and was more prominent with 0.22 mM/L  $\text{CaCl}_2$  concentration. The experiment also showed that SM and GA decreased significantly ( $P < 0.05$ ), when  $\text{ZnCl}_2$  was added to IVF media. This decrease started at 0.36 mM/L  $\text{ZnCl}_2$  concentration and became more pronounced at 0.74 mM/L concentration. This change started from 15 minutes incubation and decreased more with the prolongation of incubation period ( $P < 0.001$ ) compared to the samples diluted with IVF media alone. These results indicate that the addition of  $\text{CaCl}_2$  to semen is of a beneficial effect on sperm activity by increasing SM and GA of human sperm, while, addition of  $\text{ZnCl}_2$  to semen is of a negative effect on sperm activity through decreasing SM and GA of human sperm. Consequently,  $\text{CaCl}_2$  effects may be useful in intrauterine insemination (IUI) and IVF programs.*

جامعة النهرين

معهد أبحاث الاجنة وعلاج العقم

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة: شيماء كامل هرموش حسن

بإشراف : الاستاذ الدكتور عدنان صالح الجنابي

الدكتور محمد غني جابك

التاريخ : 2006

*The effect of the seasonal changes on reproduction iraqi subjects*

## SUMMARY

*The aim of the study is to determine the effect of seasonal fluctuations on different reproductive parameters that determine human fertility. This mixed (pro and retrospective) study was conducted on two groups of subjects, the first including 2640 randomly selected fertile couples, the wives delivered at Al- Elwiyah Maternity Teaching Hospital during 2004. The age range of the wives was (14 to 47) years and of the husbands (18 to 55) years. A detailed questionnaire on reproductive and general health histories for each couple and information about the newly born babies were taken from the medical reports of the hospital and by direct communications with the couples.*

*The results obtained confirm that there was a highly significant seasonal variations in birth and conception rates at different months of the year. The peak of the conceptions were recorded in winter, autumn and spring months and least in summer months with a deep trough in July. The conception rates were significantly negatively correlated with mean monthly temperature rates, light intensity and light duration and significantly but positively correlated with mean monthly humidity percents.*

*The second group included 100 infertile couples attending the Institute for Embryo Research and Infertility Treatment, Al- Nahrain University during 2004. 50 couples were randomly selected during summer months and the other 50 during winter months, in each of which (winter*

and summer groups), 25 couples were infertile due to male factor (relatively normal female partners) and the other 25 were infertile due to female factor (relatively normal male partners) by

clinical and laboratory assessment. The seminal fluid analysis of the relatively normal males revealed deteriorations in sperm parameters (a decrease in the sperm concentration and the percentage of motile sperms and an increase in the percentage of sperms with abnormal morphology) in summer as compared to winter and it was significant only for changes in the percentage of motile sperms. Hormonal profile for those males, however, showed a non significant seasonal fluctuations, in which there was an increase in mean serum FSH and a decrease in mean serum LH and T concentrations in summer as compared to winter. For the normal females, there was a decrease in mean serum FSH, P and PRL and an increase in LH and  $E_2$  concentrations in summer as compared to winter and it was significant only for PRL level changes. These differences in conception rates, semen parameters and reproductive hormonal profile may be related to the wide seasonal fluctuations in Baghdad from which 96% of the couples were living. It could be the high temperature of summer that may affect spermatogenesis and, hence, deteriorate semen parameters and so prolong time to pregnancy causing fewer births in spring. The hormonal changes, however, may indicate changes in the higher centres (hypothalamus and pituitary gland) and gonadal activities in response to different seasonal parameters. These results confirm that there were significant seasonal effects on human reproduction and it could be an important database information of such phenomena that may be useful in practice when taking basal reproductive analysis of couples, especially SFA and reproductive hormonal profile which are better to be done before or after summer, especially in subfertile men and it could be applicable when deciding for IVF or IUI, especially with oligospermic or subfertile male partner which is preferable to be performed before or after summer.

جامعة النهرين

معهد أبحاث الاجنة وعلاج العقم

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحث : علي عبد القادر محمدمهدي

بإشراف : المدرس الدكتور زهير كنعان

التاريخ: 2006

*The effect of in vivo administration of vitamin E on the seminal fluid parameters  
in infertile male patients*

## SUMMARY

*A prospective study about the effectiveness of in vivo administration of vitamin E on the seminal fluid parameters in 35 male infertile patients was conducted started at April 2004 to May 2005. A general history was taken and a good physical examination was done for each patient. Each one received 800 IU vitamin E (400 IU vitamin E capsule, twice daily) for 3 months. Different seminal fluid parameters were measured before starting treatment and at the end of each month. From the results of each month , we found that vitamin E is significantly beneficial in improving semen volume ( but only after the second and third month of treatment ) , semen viscosity , sperm concentration , motility % , motility index , the grade of sperm activity , sperms shaky head motility ( but only after the third month of treatment ) and sperms agglutination . We concluded that vitamin E is an important antioxidant therapy that could help patients with male infertility factor due to the reactive oxygen species that are generated from the metabolism of oxygen.*

جامعة النهرين

معهد أبحاث الاجنة وعلاج العقم

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة: سحر علي صبري سليمان

بإشراف : الاستاذ المساعد الدكتور سعد صالح الدجيلي

الاستاذ المساعد الدكتور عبد الرزاق النقاش

التاريخ : 2006

*Comparison between in trauterine and intracrvical insemination using pentoxify  
line for in vitro sperm activation*

## SUMMARY

*The objective of the study is to compare the efficacy of intrauterine and intracervical inseminations when the motility stimulant (pentoxifylline) is used for asthenospermic samples and normospermic infertile couples samples. Ninety four infertile couples with apparently normal wives were involved in this study which was carried out in the Institute of Embryo Research and Infertility Treatment, University of Baghdad, during the period from 1<sup>st</sup> October 2004 till the end of August 2005. Postcoital test (PCT) was done to the wives prior to the insemination and accordingly they were divided into two groups, group 1 (67 women) had positive (+ve) PCT ( $\geq 5$  motile sperm /HPF); they underwent an alternative cycle of intra uterine (IUI) and intracervical inseminations (ICI) and group 2 (27 women) had negative (-ve) PCT ( $< 5$  motile sperm/HPF); they were inseminated intrauterinally (IUI) only. The 94 couples underwent 120 insemination cycles, 81 of these; pentoxifylline (PF) was added following a sperm washing technique. Whereas, sperm washing without PF was performed in the remaining 39 cycles. The results of the study showed that the total cervical mucus score in the +ve PCT group was significantly ( $P<0.001$ ) higher than in the -ve PCT ( $12.78 \pm 0.13$  versus  $10.44 \pm 0.4$ ). The percentage of motile sperm was significantly improved following activation with PF compared to what was before activation ( $88.11 \pm 0.7$  versus  $44.5 \pm 1.3$ ). The grade activity of forward progressive movement (a+b) following sperm activation when adding pentoxifylline was significantly ( $P<0.001$ ) higher than that before activation ( $74.34 \pm 0.75$  versus  $24.3$*



*±1.09). Seventeen women out of the 94 had conceived (18%) during the period of the study. Following*

*sperm washing with PF. IUI was performed in 48 cycles resulting in 10 pregnancies (20.8%), while only two women got pregnant after 24 cycles of inseminations without adding PF (8.3%) however, this difference was statistically not significant ( $P>0.05$ ). Regarding the results of ICI, PF was used in 33 cycles resulting in 5 pregnancies (15.15%). Whereas, no pregnancy was recorded following 15 cycles of ICI performed without PF. The total pregnancy rate with IUI was (12/72) 16.7%, it is greater than the total pregnancy rate achieved by ICI (5/48) 10.4%. Using PF in the two insemination methods (81 cycles), achieved 15 pregnancies (18.5%). It is significantly ( $P<0.05$ ) higher than in control group (39 cycles) in which insemination was done without PF (2/39, 5.1%). In conclusion, in vitro sperm activation with pentoxifylline used to manage normospermic (unexplained infertility) or asthenospermic semen samples enhances certain sperm functions and improves the pregnancy rate after artificial insemination by IUI or ICI. Moreover, IUI offers a greater chance for pregnancy than ICI.*

جامعة النهرين

معهد أبحاث الاجنة وعلاج العقم

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة: فرح جلال محمود محمد

بإشراف : الاستاذ الدكتور عدنان صالح الجنابي

الاستاذ الدكتور قتيبة الراوي

التاريخ : 2006

*Determination of ovulation by lateral vaginal and endocervical smears*

# SUMMARY

*The objective of the present work was to study the effect of ovarian sex steroid hormones, estrogen and progesterone on the lateral vaginal squamous epithelia and endocervical columnar cells to determine the day of ovulation and compare it with the hormonal levels and transvaginal ultrasonography (TVUS).*

*The study was conducted on 40 infertile women, their age ranged from 16 to 43 years, duration of infertility from 1 to 17 year, reproductive history of all patients were available through filling of questionnaire form prepared for this purpose.*

*The method depends on taking lateral vaginal and endocervical smear on cycle day 11-18 (ovulatory period) and on cycle day 21-23 (midluteal phase) using Papanicolaou stain (Pap) method and compare it with the hormonal profile which were taken from all patients, serum FSH, LH and PRL on cycle day two, E2 on cycle day 11-18, P on cycle day 21-23 and TVUS at ovulatory period to determine the reliability of vaginal and endocervical smears as a method for determination of ovulation especially in rural areas of Iraq where no facilities for hormonal profile and ultrasound are available. Infertile women were subdivided into three groups according to their vaginal smear results: group I compatible with the hormonal profiles and TVUS (n=29), group II incompatible showing an opposite picture with hormonal profiles and TVUS (n=6), group III incompatible because of the inflammation of the genital system with polymorphonuclear infiltration (PMNI) masking the picture of the squamous epithelial cells*

*(n=5).Also infertile women were subdivided into two groups according to the endocervical smears results, group 1 compatible with the hormonal profiles and TVUS their numbers are seven, group 2 incompatible because of the genital inflammation with PMNI masking the picture of the endocervical cells, their numbers are 33.*

*Correlation study of the vaginal and endocervical smears results were performed with age of the patients, duration of infertility, hormonal levels, ovulation induction, ovulation (if present or absent), genital infection, endocervical smear and karyopyknotic index(KPI).*

*A significant correlations were observed between vaginal smears results with LH and KPI and between endocervical smears results with each of progesterone (P) level on cycle day 21-23, ovulation as evidenced by TVUS and KPI.*

*Ten fertile parous women with regular M.C. (control group), vaginal and endocervical smears were taken on cycle day 21-23, four of them showed ovulatory M.C., the other six showed anovulatory M.C. and three from the six, had their vaginal and endocervical smears show moderate to marked inflammation with PMNI. It is concluded from the results of this study that 72.5% of the vaginal smears results were compatible with the hormonal levels and TVUS, while 17.5% of the endocervical smear results were compatible with the hormonal levels and TVUS, thus the lateral vaginal smears may be more informative than endocervical smears, as a method for determination of ovulation and examination of smears of both can be utilized as a tool for hormonal profile changes in the menstrual cycle in rural areas of Iraq .*

جامعة النهرين

معهد أبحاث الاجنة وعلاج العقم

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة: أسراء عبدالله راشد فليح

بإشراف : الاستاذ الدكتور عدنان صالح الجنابي

المدرس الدكتور صباح مهدي حسين

التاريخ : 2006

*The effect of clomiphene citrate on cervical mucus score of infertile women*

## SUMMARY

*The objectives of the present study are as follows: to determine the effect of clomiphene citrate on cervical mucus sampled in the preovulatory period, and to measure serum estrogen level in both spontaneous and CC-induced cycles. The study also includes correlation between cervical mucus score and body mass index.*

*Forty-five women attending the Institute of Embryo Research and Infertility Treatment / University of Al-Nahrain were evaluated their mean age was  $32 \pm 0.75$  year, mean duration of infertility was  $4.6 \pm 0.5$  year. 75.6% of the patients were with primary infertility and 24.4% with secondary infertility. The patients were followed in spontaneous cycle and then with CC-induced cycle, they were given dose of 100 mg/day (the most common clinical dose in Iraq) for 5 days starting from cycle day 2.*

*The profile of the following reproductive hormones was done: Estrogen, follicle stimulating hormone , lutinizing hormone , and prolactin were done on cycle day 2 (pretreatment), while progesterone level was measured on cycle day 21 in spontaneous cycle.*

*Follicular growth was monitored in both cycles using transvaginal ultrasound (when the dominant follicle size was  $16 \square 20$  mm), the cervical mucus score and serum estrogen measurement were done in both cycles. Body mass index ( $\text{kg/m}^2$ ) was measured for the patients and it's effect on CM score was evaluated.*

*The results revealed that, there is a highly significant reduction ( $p < 0.0001$ ) in the total cervical mucus score and CM volume in the induced cycle. The scoring of consistency, cellularity, and spinnbarkeit are significantly decreased ( $p < 0.05$ ). while ferning change is non significant.*

*The pH of CM in the induced cycle, although is more than that of spontaneous cycle, but this increment is non significant.*

*The level of serum estrogen is significantly higher ( $p < 0.05$ ) in CC induced cycle than that of spontaneous cycle. Also a negative correlation was found between body mass index and total cervical mucus score.*

*It may be concluded from these results which were performed for the first time in Iraq that, clomiphene citrate cause a marked reduction in the quality and quantity of cervical mucus, with marked elevation in serum estrogen level, also there is a negative correlation between body mass index and cervical mucus score.*

جامعة النهرين

معهد أبحاث الاجنة وعلاج العقم

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحث : أسؤ سليمان قهرمان كارو

بأشراف : الاستاذ المساعد الدكتور محمد باقر محمد رشاد فخر الدين

الدكتور ظاهر حميد براء

التاريخ : 2006

*A comparison study on non-obstructive azoospermic patints : spermatogenic maturation arrest versus sertoli -cell-only synrome*

## SUMMARY

*This comparative study focused on comparison between non-obstructive azoospermic (NOA) patients with maturation arrest (M.A) and Sertoli cell-only syndrome (SCOS) regarding the testicular size, seminal fluid analysis (SFA), reproductive hormonal levels, seminiferous tubules diameter, and the effect of risk factors on the occurrence of both conditions. This study extended from October, 2004 to October, 2005.*

*Eighty two infertile patients with (NOA) were involved in this study. The selection of patients was based on an average of 2 pelleting seminal analysis, reproductive hormone profile, physical scrotal examination and diagnostic testicular biopsy. A detailed questionnaire was conducted to obtain a thorough history from the patients.*

*The results showed that the incidence of maturation arrest (M.A) 58.54 % was more than Sertoli cell-only syndrome (SCOS) 41.46 %. The mean age of M.A and SCOS patients were  $30.38 \pm 0.802$  and  $33.37 \pm 1.005$  years respectively, and a non significant difference was observed between the two groups. The mean testicular length for patients with SCOS ( $3.143 \pm 0.07$ ) group was significantly ( $P<0.05$ ) less than M.A ( $3.654 \pm 0.178$ ) group. A non-significant difference was assessed for seminal fluid analysis between the two groups of NOA patients. Regarding the hormonal profiles, the mean follicle stimulating hormone (FSH) for patients with SCOS was*

*significantly ( $P < 0.001$ ) higher than M.A. The mean Luteinizing hormone level in SCOS was significantly higher than M.A. The mean testosterone*

*level in SCOS was significantly lower than M.A. A non significant difference was recorded in the level of serum prolactin between M.A and SCOS.*

*In patients with M.A, there was a significant difference in the level of serum LH between smoker (9.006 mIU/ml) and non-smoker (6.775 mIU/ml), whereas non significant differences were reported in the levels of all studied hormones in patients with SCOS*

*Diagnostic testicular biopsy in patients with SCOS revealed a highly significant reduction in the mean diameter of seminiferous tubules as compared to patients with M.A ( $118.756 \pm 5.716$  vs.  $152.369 \pm 5.58$  micrometer respectively).*

*It was concluded that the NOA patients with SCOS complaining from severe deviation from normal parameters of fertile subjects than the NOA patients with M.A. Testicular biopsy is the most useful and valuable diagnosing and distinguishing tool for NOA patients.*

جامعة النهرين

معهد أبحاث الاجنة وعلاج العقم

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة: اشراق كاظم عباس طاهر

بأشراف : الاستاذة باسمه محمد عبد اللطيف الجبوري

التاريخ : 2006

*effect of licorice extract(glycyrriza glabra) on ovulation induction in immature female mice*

## SUMMARY

*The objective of this study was the assessment of licorice extract (LE) effects on ovulation induction in addition to associated structural changes in ovary, oviduct and uterus. Changes in reproductive hormones were also included.*

*This study was conducted on immature mice of four weeks age. They were divided into 6 groups: G1, G2, G3, G4, G5 and G6 (14 animals each). G1 received 1g/kg bwt/day of licorice extract for 2 weeks. G2 were fed with 0.5g/kg bwt/day of licorice extract for 2 weeks. Mice received zero dose of LE were regarded as control group (G3). G4 and G5 received the same extract doses of G1 & G2 respectively but for longer period i.e 4 weeks. G6 received zero dose and considered as a control for G4 & G5. Before the initiation of dosing, all the animals were weighed and vaginal smears were done daily and ceased when estrus phase of first ovarian cycle appeared. At the end of the experiment, the animals were weighed and blood samples were taken for hormonal analysis of the following hormones: Follicle stimulating hormone (FSH), Luteinizing hormone (LH) and Estradiol (E2). Animals were then killed and reproductive system were excised and divided into two sides: right side were weighed and the left one were prepared for histological studies. The results indicated that LE consumption caused elevation in total body and reproductive organs weights, also there was an increase in the diameter of the ovary, total number of follicles and their diameters in all mice of treated groups with higher significant increase in groups that were treated with a higher dose and longer duration. 1g/kg bwt/day was*



*also more effective upon measuring the diameters of uterine glands and the diameter of the oviductal ampulla, while the*

*lower dose gave higher results only in measuring the height of endometrial epithelial lining cells and the oviductal epithelial lining cells. FSH and E2 clearly increased in all treated groups while the elevation in LH was marked only in the groups that were treated for four weeks, in addition, there were significant precocious estrus cycle in animals that treated with 1g/kg bwt/day and a non significant precocity with 0.5g/kg bwt as compared to the control group. These results may be attributed to the effect of various components of LE, especially estrogen-like substances in addition to other components like: proteins, amino acids, vitamins and trace elements present in the licorice. The results concluded from the present study indicate that the use of low doses of LE (0.5g,1g) for a short period of time (2-4 weeks) increased the reproductive hormones, improved the reproductive organs, induced earlier estrus cycle and consequently may improve the reproduction. The consumption of 1g licorice extract daily for 4 weeks induced sexual maturity better than the other dose and period.*

جامعة النهرين

معهد أبحاث الاجنة وعلاج العقم

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة: امال غازي مطر كرم

بأشراف : الاستاذ الدكتور محيسن حسن عداي

التاريخ : 2006

*Studies on the effect of some mixed plants powder on the reproduction in mature male mice .*

## SUMMARY

*In recent years, science has made a breakthrough in the understanding of sexual dysfunction, but for hundreds of years, civilizations around the world have known about locally grown herbs that achieve wonderful results with fewer side effects than prescription drugs. This study was conducted with the aim of investigating the effect of a mixture of plants, Tribulus terrestris (aerial part), Phoenix dactilyfera (pollen grain) and Nasturitum officinale (seeds) on the reproductive system of male mice. Three different methods were used to demonstrate the effect of this plants mixture on the male mice reproductive system .A group of mature male mice treated with the powder of the plants mixture given orally with food for a period of four weeks at a dose of 150 mg/kg/day, another three groups of mature male mice treated with 75,150 and 300 mg/kg/day of the aqueous and alcoholic extracts of the mixture as I.P injection for two weeks.*

*Animal treated through these methods showed a significant increase in body weight, testes, seminal vesicles and epididymis weight .A remarkable increase in sperm concentration and percentage of sperm motility with a decrease in the percentage of abnormal sperm morphology in comparison with control group. The measurement of the hormonal levels revealed a significant increase in the LH, FSH and testosterone hormones. The histological preparations showed a remarkable increase in the diameter and height of the epithelial lining cells of the seminiferous tubules and epididymis. PCV value and RBCs count revealed a remarkable increase in all the groups of the two extracts. The results of mating untreated female mice mated with treated males*

*of all groups exhibited a decreased gestation period and an increase in litter size. Almost all of the above results concerning the use of the aqueous and alcoholic extracts of the mixture showed*

*a dose dependent manner of effects with a conclusion that the alcoholic extract is more effective than the aqueous extract at the corresponding dose level used in both extracts could be due to the difference in the active principles present in the two extracts.*

جامعة النهرين

معهد أبحاث الاجنة وعلاج العقم

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة: فريال خزل هاشم حميد

بإشراف : الاستاذ الدكتور محيسن حسن عداي

الاستاذ المساعد الدكتور سعد صالح الدجيلي

التاريخ: 2008

*The effect of aqueous extracts of medicago sativa and salvia officinalis on the reproductive parameters in mature female mice*

## SUMMARY

*The aim of the study was to investigate the effect of aqueous extracts of mixture of *Medicago sativa* (M.S. ) and *Salvia officinalis* (S.O. ) on the reproductive system of mature female mice . Six groups of mature mice received the aqueous extracts of the plants mixture which was given orally with water supplement for two different periods ( two and four weeks ) and with two different doses ( 100 mg / Kg / day and 200 mg /Kg / day ) . G 1 : treated with 100 mg / Kg / day for two weeks and G 2 : treated with 200 mg / Kg /day for two weeks , while G 3 : received tap water and regarded as control for G1 and G2. G4 and G5 treated with same dose of G1 and G2 respectively but for four weeks duration , G6 received tap water and considered as a control for G4 and G5 . The animals are weighed before the initiation of treatment and also at the end of experiment . Vaginal smears were taken . Only animals in oestrus phase were anesthetized and blood samples were taken for hormonal analysis of : follicle stimulating hormone ( FSH ) , luteinizing hormone ( LH ) , and oestradiol ( E<sub>2</sub> ) . The ovaries and uteri were dissected out , weighed and kept for histological study . The study showed a significant increase in body weight in all treated groups compared to the control groups , and increase in reproductive organs weight especially in group received higher dose (  $25.51 \pm 0.347$  ) compared to control group (  $22.34 \pm 0.223$  ). The measurement of the hormonal levels which were done at the oestrus phase of the oestrous cycle revealed a significant increase in LH and E<sub>2</sub> , while FSH was decreased in all*

*treated groups . The histological preparation showed a remarkable increase in the diameter of the ovary , number of ovarian follicles and corpus luteum ( CL ) . There was*

*anncrease in endometrial glands diameter especially in those received the extracts for long duration ( G4:  $412.7 \pm 15.104$  and G5 :  $493.73 \pm 24.601$  ) compared to control group (  $319.44 \pm 8.717$  ) , while the uterine epithelial cells height increased significantly in all treated groups . It is conducted from the results of present study that the use of aqueous extracts of the mixture of *Medicago sativa* and *Salvia officinalis* may be attributed to the effect of phytoestrogen constituents of both plants on the female reproductive system .*

جامعة النهرين

معهد أبحاث الاجنة وعلاج العقم

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحث: محمد حسن شعبان حسن

بإشراف : الاستاذ المساعد الدكتور محمد باقر محمد رشاد فخر الدين

التاريخ : 2008

*An in vitro human sperm activation study : using Ham's F-12 medium and human serum albumin for infertile patients*

## SUMMARY

*The objective of the present study was to investigate the efficacy of Ham's F-12 medium as sperm preparation medium and the effectiveness of human serum albumin HSA as sperm stimulator in in vitro human sperm activation for infertile patients. One hundred forty (140) infertile males were shared in present study. The mean ages of infertile males were  $35.62 \pm 4.32$  years. The mean duration of infertility of them was  $6.06 \pm 0.22$  years with range of 1-11 year. Ham's F-12 medium was used as control group and three different concentrations of HSA were used (5%, 7.5% and 10%), with two incubation periods (15 and 30 minutes). Seventy semen samples were prepared using centrifugation swim-up technique, and the other seventy semen samples prepared using direct swim-up technique. The comparison was done between parameters of semen of all treated groups post- activation with pre- activation parameters and control group (Ham's F-12 medium). The results of the present study showed that a significant improvement in seminal fluid analysis parameters especially sperm concentration, percentage of sperm agglutination and round cells concentration were reduced significantly ( $P < 0.01$ ) in both technique. In contrast, percentages of sperm motility, progressive sperm activity (grades A and B) and normal sperm morphology were increased significantly ( $P < 0.05$ ) using both technique*

*With the usage of Ham's F-12 medium also significant enhancement were reported in compared to pre- activation Sperm concentration, sperm agglutination percentage and round cells concentration were reduced significantly ( $P < 0.01$ ) in both techniques. On the other hand,*

*percentage of sperm motility, percentage of progressive sperm activity (grades A+B) and normal sperm morphology (%) were increased significantly ( $P<0.05$ ) using both techniques*The results

*showed that the addition of HSA to the culture medium enhances sperm motility (%), percentage of progressive sperm activity (grades A and B) and normal sperm morphology (%) using both techniques. Moreover, the best results were reported with 5% HSA and 7.5% HSA after 30 minutes of incubation. In addition to that, the results of sperm activation were better with asthenozoospermic patients than oligozoospermic and oligoasthenozoospermic patients.*

جامعة النهرين

معهد أبحاث الاجنة وعلاج العقم

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة: ندى فليح حسن خلف

بإشراف : الاستاذ المساعد الدكتور أسامه سليمان الناصري

التاريخ: 2008

*Outcome of intrauterine insemination following vitro sperm activation of men complaining from deferens grades of varicocele*

## SUMMARY

*The objective of this study is to find out the pregnancy rate after intrauterine insemination of washed sperm in vitro, of men complaining from different grades of varicocele. Ninety one infertile couples were enrolled in this study, the couples were divided into two groups; group one 51 men with varicocele; 26 grade I (GI), 15 grade II (GII), 10 grade III (GIII) and group two 40 men without varicocele (control). All the spouses were apparently normal. This study was carried out in the Institute of Embryo Research and Infertility Treatment, AL-Nahrain University from 1<sup>st</sup> of October 2006 till the end of August 2007. Semen samples were taken from the husbands either with or without varicocele in male infertility clinic underwent sperm washing technique and record the sperm parameters results, to exclude the unfit samples and determine the varicocele grade that respond to in vitro activation technique in couples in whom men complaining from varicocele. The ninety one couples underwent (91) intrauterine insemination cycles. The results of the study showed that the percentage of progressive sperm motility grade a was significantly ( $P<0.001$ ) improved following in vitro activation in all grades of varicocele and without varicocele compared to before activation; GI ( $29.50 \pm 3.43$  vs  $1.53 \pm 0.91$ ), GII ( $24.33 \pm 4.90$  vs  $1.33 \pm 0.59$ ), GIII ( $14.00 \pm 1.63$  vs  $1.00 \pm 0.66$ ) and control ( $43.62 \pm 3.66$  versus  $6.30 \pm 1.57$ ). The progressive sperm motility a+b following sperm activation was significantly ( $P<0.001$ ) higher than that before activation; in men with varicocele GI ( $75.03 \pm 3.31$  vs  $29.61 \pm 2.85$ ), GII*



( $63.33 \pm 5.03$  vs  $37.66 \pm 4.70$ ), *GIII* ( $63.00 \pm 5.33$  vs  $40.00 \pm 4.08$ ) and in men without varicocele ( $83.75 \pm 1.86$  versus  $38.25 \pm 2.88$ ). The pregnancy rate of our study was 12/91 (13.1%). In Forty

infertile couples (control) without varicocele the pregnancy outcome was four (10%) following IUI with in vitro activation. While in fifty one infertile couples with varicocele, (8) women got pregnant after IUI with in vitro activation (*GI* 8/26, *GII* 0/15, *GIII* 0/10) (15.7%). The pregnancy rate in varicocele *GI* was 8/26 (30.7%) which was statistically significant ( $P < 0.05$ ) compared to control. It was concluded from the present study that IUI with in vitro activation is a process that offers a reasonable success pregnancy rate for infertile couples with varicocele grade I but not for those with grade II and III. They may be a good candidates for IVF and ART programs.

جامعة النهرين

معهد أبحاث الاجنة وعلاج العقم

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة: أنعام عبد الواحد ذيب علي

بإشراف : الاستاذ المساعد الدكتور سعد صالح الدجيلي

التاريخ : 2008

*Outcome of artificial insemination following using the cervical and uterine pentoxifyllin*

## SUMMARY

*The objective of this study is to improve the outcome of the intrauterine insemination (IUI) and intracervical insemination (ICI) with the use of motility stimulant - pentoxifylline (PF) for washing of the uterine cavity and the cervical canal directly before insemination. The insemination was carried out for couples with apparently normal females and the males with mild asthenospermia or other mild male factor infertility. Eighty two couples were involved in the study that was performed in the Institute of Embryo Research and Infertility Treatment, University of Al-Nahrain, during the period from July 2006 to April 2007. Cervical mucus scores (CMS) and post coital test (PCT) were done to the patients prior to insemination and according to the results of these two tests, the patients were divided into two groups:*

- Group1: those women with CMS above 10 and with positive (+ve) PCT (n=61). They underwent either IUI or ICI alternatively.*
- Group 2: those women with CMS bellow 10 and had negative (- ve) PCT (n=21).They underwent IUI only.*

*In this study, 82 patients underwent 90 insemination cycles. The insemination cycle equals to one menstrual cycle i.e. eight out of the 82 patients underwent repeated insemination. The insemination was done with the use of PF for 48 cycles and the remaining 42 cycles the insemination was done without the use of PF (control group).*

*The result of the study revealed that, 13 women out of 82 had conceived (14.44%). In seventy cycles IUI was done. Eight pregnancies was resulted following IUI with the use of PF*

*treatment out of cycles (22.22%) and 3 pregnancies was resulted following IUI without PF treatment out of 34 cycles (8.82%). Intracervical insemination was accomplished in 20 cycles. Two pregnancies was resulted from 12 cycles (16.66 %) in which the ICI was done after washing the cervical canal with PF. No pregnancy resulted from the remaining 8 cycles that performed without using PF. Using PF in the two methods of insemination (IUI and ICI/48 cycles) resulted in 10 pregnancies (20.83%), and this was significantly ( $P < 0.0001$ ) higher than that of the control group (42 cycles) in which insemination was done without the use of PF and resulted in only 3 pregnancies (7.14%). It was concluded from the present study that the use of PF to treat the uterine and cervical environment before insemination resulted in improvement of pregnancy rates. At the same time it has been found that IUI gave best chance for pregnancy than ICI.*

جامعة النهرين

معهد أبحاث الاجنة وعلاج العقم

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة: بشرى رشيد سبيع العزاوي

بإشراف : الاستاذ الدكتور وليد حميد يوسف

: الاستاذ الدكتور محمد الجنابي

التاريخ: 2008

*Comparative study between the effect clomid and metformin versus clomid ,metoformin and spironolactone on the management of polycystic ovarian syndrome*

## SUMMARY

*The objective of present study is to compare the effect of clomiphene citrate and metformin alone or with spirinolactone on management of Polycystic Ovarian syndrome. Thirty infertile women were involved in this study during their attendance at the Institute for Embryo Research And Infertility Treatment/ Al-Naharin University, divided into tow groups (15 women per group ) each was associated with PCOS after clinically and laboratory diagnosis. Blood sample was collected from each patient (LH, FSH, Prolactin) at day 5 of menstrual cycle (follicular phase) for the determination of LH, FSH and prolactin value and on day 21 of menstrual cycle for the determination of serum progesterone and testosterone level . The second blood sample was collected for measurement of lipid profile (cholesterol ,LDL, HDL, Triglyceride) and fasting blood sugar . Patients were diagnosed as PCOS by U/S as PCOS which show 8- 10 mm small cysts at periphery of ovary not more than 4-6 mm like string of pearls with hirsutism and more than 8 Score in most patients with Body Mass Index ( BMI>25kg). Group 1 was treated with ( clomid tablet 50 mg \ t.i.d + metformin 500 mg \ t.i.d ) and group 2 was treated with ( clomid 50 mg \ t.i.d + metformin 500 mg \ t.i.d + spirinolactone 50 mg \ day ). Treatments lasted for 3 months. The result showed no significant ( P 0.05 ) effect on the BMI and blood pressure ( B. P). There was a significant ( P 0.05) decrease in LH and increase in FSH levels in group 1 while*

*high significant(P0.0001) effect in group 2 in decrease in LH and increase in FSH level and LH/FSH ratio retained to normal level in group 2 in comparison with that in*

*group 1. The two groups of drugs produce a significant decrease on serum cholesterol and LDL, while a significantly increase in serum triglyceride which is more effective to decrease cardiovascular disease. It was concluded from the present study that the two groups were sensitized in management of PCOS but group2 more effective with clomid, metformin and spironolactone than clomid and metformin in management PCOS.*

جامعة النهرين

معهد أبحاث الاجنة وعلاج العقم

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة: زهرة عبد الحسين زبالة

بإشراف : الاستاذة باسمه محمد عبد اللطيف الجبوري

الاستاذ المساعد الدكتور عبد الحسين مويث

التاريخ: 2008

*Determination of Causes Leading to Azoospermia in Iraqi Infertile Men*

## SUMMARY

*This study is an attempt to determine the causes of azoospermia in Iraqi infertile men. The study involves one hundred eighty azoospermic infertile patients with age ranged between (20-55) years, who were attending the Institute of Embryo Research and Infertility treatment/Al-Nahrain University. The period of study extended from September (2006) to July (2007). A detailed questionnaire on reproductive and health histories were taken from every patient. All patients had done the seminal analysis which are revealed no sperm in the pellet and available reproductive hormones ;Follicular stimulating hormone (FSH) ,Luteinizing (LH),Prolactin and Testosterone were obtained from most of the patients .A good number of patients could have testicular biopsy and scrotal ultrasonography which were of help in determination the cause of azoospermia. Just 25 azoospermic patients could have genetic analyses (Cytogenetic and molecular analysis),for these cases genomic DNA was extracted using peripheral blood ,the sequence tagged sites( STS)primers tested on these patients were SY84(AZF<sub>a</sub>), SY127(AZF<sub>b</sub>), SY254(AZF<sub>c</sub>). Most of the studied patients complained of primary infertility (97.7%). Family history of azoospermia or severe oligozoospermia was found in 28% of patients. Regarding the risk factor; genitourinary tract infection was the most common medical risk factor which was noticed in (84.72%). Post pubertal mumps was found in (8%) of azoospermic patients. Varicocele was the major surgical risk factors which was found in(69.04%) of patients. The second common surgical factor is hydrocele, which was found in (11.9%). While cryptorchidism testes was found in*

(7.14%), patients with history of operation for inguinal hernia were found in (4.76%), cigarette smoking was found in (78.75%) of patients. Seminal fluid analysis revealed that physical characteristics of the semen within the WHO normal values for semen analysis (1999), (18%) of azoospermic patients showed low volume of seminal fluid. Hormonal assay revealed most of patients (62.68%) had high level of FSH, while LH concentrations were in normal or upper normal limits in (64.92%). Prolactin level increased in adequate number of azoospermic patients (36.5%). Testosterone concentration were normal or low normal limits in (73.3%) of patients and decreased in (21.64%) of patients. Testicular biopsy revealed spermatogenesis arrest in (60.6%) of patients which was more than Sertoli cell syndrome (27.86%). Complete arrest was in (60.98%) while partial arrest was in (19.67%) of patients' biopsies. Cytogenetic analysis revealed that all examined patients had normal karyotype (XY). The molecular analysis results revealed that (24%) of patients with microdeletion of azoospermic factors (AZF), (50%) of them had deletion in AZFc+AZFa, while (33.3%) of patients had deletion in AZFc alone and (16.7%) patients had deletions in AZFb. Testicular causes were the most cause of azoospermia contribute in (72.77%) while pretesticular contribute in (16.66%), and the post testicular cause in (10.55%).

جامعة النهرين

معهد أبحاث الاجنة وعلاج العقم

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحث : شعيب ابراهيم علي سامن

بإشراف : الاستاذ المساعد الدكتور أسامه سليمان الناصري

التاريخ: 2008

*Assessment of testicular biopsy and outcome of in vitro culture from non-obstructive azoospermic patients*

## SUMMARY

*Open testicular biopsy is the most useful and valuable diagnosing and distinguishing tool for azoospermic patient. It was concluded that human germ cells can undergo unusually rapid trans-meiotic and postmeiotic differentiation when cultured in-vitro in media supplemented with high concentrations of follicle-stimulating hormone, and testosterone. This study focused on assessment of testicular biopsy from azoospermic patients and outcome of in-vitro culture from non-obstructed azoospermic patient, with maturation arrest which has been extended from November, 2006 to May, 2008. Depending on the serum level of hormonal profile involving FSH, Luteinizing hormone, testosterone, prolactin and testicular size, azoospermic patients can be divided in to obstructed and non-obstructed azoospermia. Non-obstructed may be classified in to several categories based up on testicular histological changes including:*

*Hypo-spermatogenesis, spermatogenetic maturation arrest and Sertoli cell only syndrome (SCOS). Furthermore, there may be mixed patterns of histology and varying degree of tubular fibrosis. Thirty-four infertile azoospermic patients were involved in this study. The selection of patients was based on seminal fluid analysis, reproductive hormone profile, physical scrotal examination and testicular biopsy. Detailed questionnaire was used to obtain a thorough history from the patients. Open testicular biopsy under local or general anesthesia, part of the samples send for histological assessment of spermatogenesis (seminiferous tubules with or without germ cells, number, type, distribution, localization, morphology of germinal epithelium, and presence*



*or absence of the sperm focus). Other parts for in-vitro culture, which include culture media (m-RPMI-1640) and human serum albumin*

*(HSA: 5%), in a ratio 10:7, adding rFSH (50 and 75 IU/L) and testosterone 1  $\mu$ mol/L to the media, incubate for 72 hours, the viability and the progression of spermatogenesis assessed. Different ratio of culture medium and HSA, and different concentration of rFSH and testosterone not performed because of limited quantity of testicular tissues. Our results showed that despite several attempts, we did not observe any effect of a combination of FSH and T on germ cell differentiation. From the clinical viewpoint, several conclusions can be drawn from the present study. All these conclusions can serve as a starting point for further focused research. The fact that the present findings were obtained with a relatively crude culture system is encouraging and suggests that the development of human germ cells in-vitro can further improved by refinement of the technique.*

جامعة النهرين

معهد أبحاث الاجنة وعلاج العقم

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة: علياء سامي ايوب شريف

بإشراف : الاستاذة باسمه محمد عبد اللطيف الجبوري

التاريخ: 2008

### *Determination of puberty age in a simple of Irqi females*

## SUMMARY

*The aim of this study is to determine the time of puberty and age at menarche of Iraqi girls and its related factors which may affects the time of puberty and age of the menarche. The study was carried out on (200) healthy school girls, which mean that they experienced normal puberty from the middle part of Iraq. The total numbers were divided into four groups (8-10) year, (10.1-12) year, (12.1-14) year, and (14.1-16) year.*

*The work is divided into three parts. First a collection of data using the questionnaires form which also include anthropometric measurements. Second, laboratory tests which include Hemoglobin (Hb %), Follicle-Stimulating Hormone (FSH), Luteinizing Hormone (LH), and estradiol level. The third part is the analysis of the data using statistical package (SPSS). The statistical significance of difference in the mean is assessed using one-way analysis of variance (ANOVA) test.*

*The results show that most of the girls included in the study (182 girls) have a sign of puberty (breast bud and pubic axillary's hair) and the remaining can be regarded as Tanner stage (B1), these are mostly within first age group (8-10) year, which show the beginning of sign of puberty. The tanner stage (B2) is starting at the second age group (10.1-12) year because of the presence of breast bud, pubic axillaries, and acne increases to 14.84 %, and 12.1 % respectively. Tanner stage (B3) begins at the third age group (12.1-14) year where the percents increase to 50.55 %, and 55.2 % respectively. Pubertal stage (B4) is clear in the fourth age group (14.1-16) year.*

*It is found that the mean age at onset of breast development (age of puberty) for Iraqi girls is (10.32) years. The results of studying the factors that could affect the age of puberty and menarche, the results show that most of the girls are within good and medium socioeconomic status, 66% and 32% respectively ( $P < 0.05$ ) which may aid in decreasing the time of puberty and age of menarche due to good nutrition and living standards. Concerning the psychological status the results revealed that (60.5%) and (27%) have stable and tense psychological status respectively.*

*The percent of menstruated girls is (70.5%). First age group shows lower percent (12.5%) and all have irregular menses. The highest percent (100%) was found at fourth age group with higher percent of regular menses (85%). The results indicate that the mean age of menarche for Iraqi girls is  $(11.52 \pm 0.072)$  years. From menarcheal girls, minimum age of menarche was 8.09 years old and maximum age was 14.03 years old. Earlier age at menarche for Iraqi girls as compared with some countries may be attributed to many factors such that genetic, environmental (including life style), temperature and sun light, food preference and sufficient nutrition, and health status. It is not found that factors affect the current circumstances of the age of puberty and age at menarche since there is no previous researches about the same subject to be compared.*

*Regarding anthropometric analysis, a slight decrease in mean weight at middle age (10-14) years is detected because of experienced menarche which may lead to some psychological conflicts because of maturation. There are no significant differences ( $P > 0.05$ ) in height except in the girls that experience menarche (4th age group). Concerning Body Mass Index (BMI), most of studied girls are within normal weight status with high significant ( $P < 0.001$ ) with under and over weight and have  $(21.17 \pm 0.123)$  kg/m<sup>2</sup> and percent (90.5%).*

*The results of blood and hormone analysis show that the (Hb %) is high in young girls (8-10) year and decreases with age ( $P > 0.05$  non significant). There are increase in the level of serum FSH, LH, and estradiol ( $P < 0.05$ ) with increasing age during puberty stimulating follicle maturation and estrogen production in the ovaries.*

جامعة النهرين

معهد أبحاث الاجنة وعلاج العقم

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة: تماضر مداح حسن احمد

بإشراف : الاستاذ الدكتور وليد حميد يوسف

الاستاذ المساعد الدكتور نعمة حمد حسن

التاريخ : 2009

*Evaluation of hormonal profile, semen quality and outcomes of in vitro sperm activation in type 1 diabetic infertile male*

## SUMMARY

*The present study was conducted from December 2007 to September 2008 at Al-Ramadi General Hospital on infertile type I diabetic male patients. The study aimed to assess the hormonal profile of pituitary-testicular axis, to study the semen quality and the effects of in vitro sperm activation techniques on semen parameters and to compare these results with that of nondiabetic infertile men. Three groups of subjects were studied, 24 healthy fertile men, 22 non diabetic infertile men and 20 diabetic type 1 infertile man. A significant ( $P < 0.05$ ) reduction in semen parameters (semen volume, sperm concentrations, percentage motility, and percentage of progressive sperm motility) and significant ( $P < 0.05$ ) increase in other parameters (round cells count and sperm agglutination) were observed in diabetic infertile patients when compared to healthy fertile men. Other than a small, but significant ( $P < 0.05$ ) reduction in semen volume and significant ( $P < 0.05$ ) increase in round cells count, Diabetes caused no significant effects on other semen parameters in infertile men when compared with nondiabetic infertiles. Mean serum FSH concentrations significantly ( $P < 0.05$ ) decreased in diabetic infertile men when compared with those healthy fertile and nondiabetic infertile men; there was significant ( $P < 0.05$ ) decrease in FSH concentrations in nondiabetic infertile men when compared with healthy fertile men. Mean serum LH concentrations significantly ( $P < 0.05$ ) decreased in diabetic infertile men compared with those healthy fertile and nondiabetic infertile men. There were no significant statistical differences in serum testosterone and*

*Prolactin concentrations among the three groups. In vitro sperm activation had good effects on sperm parameters of both diabetic and non diabetic infertile men, as all parameters improved after activation, there were no significant statistical differences other than round cells count (which was higher in diabetics) between infertile men diabetic and non diabetic after activation. The present study concludes that the discrepant finding between different studies on this subject may reflect the nonuniform patient selection criteria (as age, diabetic status well controlled or poorly controlled and duration of the disease). The reduced LH and FSH levels in diabetics may indicate a decreased releasable pool of pituitary gonadotrophins and presence of a central disorder, rather than peripheral gonadal impairment in DM. In vitro sperm activation appeared to be a successful means to prepare the semen of infertile patients for performing further assisted reproductive technologies as intrauterine insemination or in vitro fertilization.*

جامعة النهرين

معهد أبحاث الاجنة وعلاج العقم

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة : خلود ناجي غفوري عبود

بإشراف : الاستاذ المساعد الدكتور محمد باقر محمد رشاد

التاريخ : 2009

*An in vitro human sperm activation and intra –uterine insemination study using global and Ham's f-12 media*

## SUMMARY

*The objective of the present study was to investigate the efficacy of three different sperm preparation media on the sperm parameters during in vitro sperm activation and evaluation of Intra-uterine insemination outcome using the three culture media in different studied groups. The culture media used were Global medium (first time used in Iraq), Ham's F-12 medium and Ham's F-12 medium enriched with 5% human serum albumin. One hundred fifty six couples were included in the present study. The mean ages of infertile males were  $35.88 \pm 0.29$  years with mean duration of infertility of  $5.44 \pm 0.29$  years. The male partners had mild male factor infertility diagnosed by seminal fluid analysis which was done in the Institute. For all infertile males, in vitro sperm activation was performed by direct swim-up (simple layer) technique using the different culture media. The infertile males shared in this study were grouped into three groups according to type of media used in sperm preparation. In 55 infertile males Global medium was used, while in another 51 infertile males, Ham's F-12 medium was used, and lastly in 50 infertile males Ham's F-12 medium enriched with 5% human serum albumin was used. The results of this study showed that there was an enhancement in sperm parameters post-activation using the three culture media. There was a significant improvement ( $P < 0.05$ ) in the percentages of progressive sperm motility and normal sperm morphology as compared with pre-activation sperm parameters. Intra-uterine insemination was done for all wives of the infertile males involved in the study after being prepared. The insemination was done in the operating theater at the*

*Institute of Embryo Research and Infertility Treatment, using the husband's prepared sperms in its proper time. Luteal phase support was prescribed and two weeks later, pregnancy test in blood*

*was done to evaluate the outcome of insemination. Among the 156 couples shared in the study, 23 couples got positive pregnancy test with over all percentage of (14.7). The highest results was in group used Global medium in the sperm preparation, from the 55 couples 10 got the positive results with 18.1%, where the highest percentages of progressive sperm motility and normal sperm morphology were obtained after the in vitro sperm activation. Using the Ham's F-12 medium, from the 51 couples performed the Intra-uterine insemination, 8 couples got the positive results with 15.6%. While with Ham's F-12 medium enriched with 5% human serum albumin, among the 50 couples only 5 couples had positive results (10%). From the results of the present study, it was concluded that Global medium has the best results of Intra-uterine insemination compared with Ham's F-12 medium with or without adding human serum albumin. In addition it was concluded that human serum albumin enhanced human sperm parameters but has no significant effect on outcome of Intra-uterine insemination.*

جامعة النهرين

معهد أبحاث الاجنة وعلاج العقم

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحث : فاضل عادل عارف عبد الحليم

بإشراف : الاستاذ المساعد الدكتور سعد صالح الدجيلي

التاريخ : 2009

*Correlation between intra-uterine insemination outcome and kruger strict criteria using two staining methods to detected sperm morphology of infertile men.*

## SUMMARY

*The objective of this study is to achieve two major goals that is the assessment of sperm morphology by applying Kruger strict criteria , using two different biological stains, named commercially Testsimplets (pre-stained slides) , and Sperm-O-Scan stain and to have a cut off value for morphologically normal sperm that resulting into a successful intrauterine insemination outcome. Fifty Five unselected couples attending the Institute of Embryo Researches and Infertility treatment were included in this prospective study from December 2007 till August 2008 .The mean age of male partner was  $31.7 \pm 1.87$  years with an average duration of  $6.25 \pm 1.65$  years of infertility. Both, Male partner and female spouse were subjected to full clinical assessment at the Infertility Clinic, which was performed by the infertility consultant, prepared and guided for Intra uterine insemination. In vitro sperm activation using layering swim-up technique was done for them. Assessments of the morphologically normal sperm of the samples were done by using both, High power field and Kruger strict criteria where the two former stains used. Correlation of the positive Intrauterine insemination results and morphological normal sperm by Kruger strict criteria is recorded denoting the cut off value for successful results. The mean of morphological normal sperm applying Kruger strict criteria using Sperm O scan stain before In vitro sperm activation was 16.10% and after In vitro sperm activation was 37.85% and by using Testisimplet stain before In vitro sperm activation was 15.14% and after In vitro sperm activation was 37.09% where there were no significant ( $P > 0.05$ ) differences between the results of*



*morphologically normal sperm of the two stains. The result of Intra uterine insemination was*

*11 positive pregnancies out of the 55 cases. The mean of morphologically normal sperm using Kruger strict criteria for these positive cases was 11.58% by Sperm O scan stain and was 12.84% when using Testisimplet stain. From the results of the present study, it was concluded that there was no significant statistical difference between the two stains. Nevertheless Testisimplet stain found to be easier, simpler and less time consuming technically. Globally, for the first time, the present study offered a cut off value for morphologically normal sperm applying Kruger strict criteria using two different biological stains for a successful Intra uterine program.*

جامعة النهرين

معهد أبحاث الاجنة وعلاج العقم

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة: نغم طارق شكري شوكت

بإشراف : الاستاذ المساعد الدكتور محمد باقر محمد رشاد

التاريخ : 2009

*Assessment of polycystic ovary syndrome and collation to menstrual cycle and reproductive function after treatment with different superovulation protocols..*

## SUMMARY

*Polycystic ovary syndrome is a heterogenous syndrome inspite of accumulated literatures and remarkable advance in the understanding of polycystic ovary syndrome. The etiology of PCOS is not clear and the primary mechanism is not known. This study represents a wide range of this disorder rather than a single entity. It focused on assessment of PCOS and it correlation to menstrual and reproductive functions after treatment with different superovulation protocols.*

*One hundred eighty one females were involved during their attendance to Institute of Embryo Research and Infertility Treatment / Al- Nahrain University during the period from September 2007 to July 2008. The mean age for infertile females was  $(29.166 \pm 0.497)$  years with the mean duration of infertility  $(54.58 \pm 3.183)$  months. The females were divided into two groups, infertile control group (No. = 87) and PCOS group (No. = 94). Clinical and hormonal assessments were done for all infertile females in addition to blood groups and haemoglobin level. Clinical assessment included medical history and examination, BMI, vaginal ultrasonography while hormonal assessment included estimation level of serum hormones FSH, LH, E<sub>2</sub>, prolactin, testosterone with calculation FSH:LH ratio and LH:FSH ratio.*

*Diagnosis of the PCOS was depending on Rotterdam diagnostic criteria for PCOS and the results obtained from the two groups had been compared. The results showed that the mean age for*

*PCOS group was lower than mean age of control group and the percentage of obesity was more in PCOS than in control group.*

*The patients with PCOS were divided into seven groups according to the types of drugs or to the combinations of drugs used with countious follow up. Vaginal ultrasound and hormonal assay were used to study the effects of these drugs on menstrual cycle, endometrial thickness, number and size of Graafian follicles, reproductive hormones and percentage of pregnancy with and without IUI (natural pregnancy).*

*Results show difference in the menstrual pattern between infertile control and PCOS groups. (No.=68; 78.16%) of control group are with regular cycle while, (No.=68; 72.34%) of PCOS patients are with irregular cycle. The pattern of cycle is improved after using treatment and the best results obtained in patients administered (Clomiphene citrate, follitropin alfa and metformin hydrochloride).*

*The present study indicates that (No.=80; 92%) of control females had Graafian follicles while only (No.=3; 3.19%) of PCOS patients had Graafian follicle. But the percentage of PCOS patients having follicles increased to (No. =59; 62.8%) with induction of ovulation.*

*According to results, the IUI outcome in control females showed non significant different from IUI outcome for treated PCOS patients.*

جامعة النهرين

معهد أبحاث الاجنة وعلاج العقم

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة : سجي فاروق فيصل علي

بإشراف : الاستاذ المساعد الدكتور اسامة سليمان الناصري

المساعد الدكتورة نوال خيرى حسين

التاريخ : 2010

*lead ,Cadmium and other metals in relation to semen quality .*

## SUMMARY

*The present study was designed to explore relationships between heavy metals and semen quality among men with exposure levels that are likely to be representative of those found among the general population. The population of the study consisted of (81) infertile males with age ranging (20-50 years), attending the Institute for Embryo Research and Infertility Treatment/ AL-Nahrain- University, with (26) healthy fertile males selected from general population as control group. Blood and semen sample were collected from each one. Infertile patients were grouped according to their sperm concentration into infertile with (normozoospermia, mild oligozoospermia, moderately severe oligozoospermia, severe oligozoospermia and azoospermia) also they were grouped according to sperm motility and morphology into infertile with normal motility/ morphology and infertile with asthenoteratozoospermia. Lead, cadmium , zinc and copper concentrations in serum and seminal plasma were determined by atomic absorption spectrophotometer in each group . The study showed no statistically significant (  $P>0.05$ ) difference in blood lead concentration among the infertile groups compared with fertile controls, while there was a statistically significant increase in seminal plasma lead mean value in moderate and severe oligozoospermic infertile males than in fertile male controls ( $p<0.05$ ) with no influence on serum levels of FSH, LH, prolactin, and testosterone . The study showed no statistically significant (  $P>0.05$ ) difference in mean serum Cd concentration among infertile groups compared with controls, but it showed a statistically significant ( $P<0.05$ ) difference in*

*mean seminal Cd concentration among sperm concentration categories of infertile groups compared to controls .*

*The results of the present study showed that being infertile is associated with a mean reduction in serum Zn compared to control group. Both oligo and asthenoteratozoospermia are associated with a further reduction in serum Zn . There was no statistically significant (  $P>0.05$  ) difference in mean seminal Zn concentration among infertile group compared to controls, however the rate of oligozoospermia was highest among those with average seminal Zn quartile and lowest among those in the fourth quartile. Serum Cu concentration determination in different infertile groups revealed that there was no statistically significant (  $P>0.05$  ) differences between the groups compared with the control group, while seminal Cu show important and statistically significant(  $P<0.05$  ) association with rate of asthenoteratozoospermia and a positive linear correlation with sperm concentration. From all of these it can be concluded that even moderate exposure to Pb or Cd can significantly reduce human semen quality and their seminal plasma concentration may provide better assessment of the accumulated amount in the reproductive system. On the basis of the findings of this study and those of other reports, an optimum balance between the trace elements, especially between Zn,Cu and Cd are needed.*

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معهد أبحاث الاجنة وعلاج العقم

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة : فاتن عبد العزيز عبد الحميد هادي

بإشراف : الاستاذ الدكتور محيسن حسن عداي

التاريخ: 2011

*effect of tribulus terrestris on sperm activation in vitro of asthenospermic men*

## SUMMARY

*The present investigation was conducted to study the possible effects of the aqueous and alcoholic crude extracts of Tribulus terrestris on semen of asthenospermic infertile patients in vitro by using a direct swim-up (Simple layer) technique. One hundred thirty patients with mild male infertility factor (mild asthenospermia) of different ages and duration of infertility were involved in this prospective study. The duration of infertility was between 2-11 years and the mean duration of infertility of them was  $(5.34 \pm 0.29)$ . A wide range of doses of the aqueous extract namely ( 1200, 600, 300, 150, 75, 50, 25, 1 and 0.04  $\mu\text{g/ml}$ ) and many doses of the alcoholic extract (600, 150, 25 and 1  $\mu\text{g/ml}$ ) were tested for their possible activity on sperm concentration, sperm motility, grades of sperm motility and sperm morphology after mixing with Global medium.*

*The different dose levels of the aqueous and alcoholic extracts mixed with Global medium showed that the sperm concentration was lower than that before activation and after activation with Global medium alone in all dose levels used, whereas the sperm motility was higher than that before activation and lower than that after activation with Global medium alone. Grade A and grade B of sperm motility were lower than their values before and after activation with Global medium alone, whereas grade C was higher than that before and after activation with global medium alone and grade D was lower than that before activation and higher than that after activation with Global medium alone.*

*As concerning the sperm morphology, the different dose levels of both extracts exhibited an increase in normal sperm morphology in comparison with the value before activation, whereas*

*this value was higher when the samples activated with Global medium alone compared with the activation with the mixture of Global medium and doses of both extracts. By using the aqueous and alcoholic crude extracts of the aerial parts of Tribulus terrestris showed negative results on human sperm activation in vitro. Finally, it can be concluded from the present results that the use of different dose levels of aqueous and alcoholic extracts of TT revealed a negative results on sperm activation in vitro.*

جامعة النهرين

معهد أبحاث الاجنة وعلاج العقم

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة : احلام صادق حسن علي

بإشراف : الاستاذ المساعد الدكتور محمد باقر محمد رشاد

التاريخ : 2011

*Amenorrhea Classification and causes in relation to Different physiological, clinical, Environmental and social parameters .*

## SUMMARY

*Amenorrhea is not a disease by itself, it's a symptom of underlying diseases. The differential diagnosis of amenorrhea is broad. It can range from genetic abnormality to endocrine disorder and psychological, environmental, and structural anomalies. To facilitate prompt and accurate diagnosis workup, obtaining through a history and performing detailed physical examination is essential, the most important step in differential diagnosis of primary or secondary amenorrhea is to exclude pregnancy, then an algorithmic approach is followed to narrow the diagnostic possibilities. Causes of primary and secondary amenorrhea overlap considerably therefore, ascertaining the patient's sexual development and present of menarche are the key to differentiating these conditions.*

*One hundred fifty females were involved in this study during their attendance to Institute of Embryo Research and Infertility Treatment / Al-Nahrain University during the period from May 2009 to the end of January 2010, and their mean age was  $(28.14 \pm 1.184)$  year). The females were divided into two groups. The control group (No.= 50 ), their age range from (15–45 year) with mean age  $(26.900 \pm 0.852)$  year), whom they have normal menstrual cycle and they had no duration of infertility, the second group is amenorrhea group (No.= 100), their age range from (15–45 year) with mean age  $(28.76 \pm 1.350)$  year), and their duration of infertility was range from (1-17 year) with mean values  $(3.934 \pm 0.410)$  year).*



*After excluded pregnancy by Human chorionic gonadotropin (hCG) test and by Ultrasound(U/S) examination, The correct diagnosis of underlying causes of amenorrhea is done by full*

*history, physical examination, clinical evaluation, hormonal assessment, Ultrasound (U/S) study, chromosomal study and Magnetic Resonance Image (MRI) study.*

*The results of the present study appeared that, the amenorrheic group was subdivided into two groups:*

*1- Primary amenorrhea group (No.= 10) their age range from (15-45 year) with mean age of (22.900  $\pm$  2.674 year) and their duration of infertility range from (1-17 year) with mean duration of infertility was (4.85 $\pm$ 1.545 year). In primary amenorrhea the underlying causes were, anatomical defect (No.= 3; 30%), genetic anomalies (No.=3; 30%), Hypopituitarism (No.=2; 20%) hypothalamic disorder (No.=1; 10%), constitutional delay of puberty (No.=1; 10%).*

*2- Secondary amenorrhea group (No.= 90 ) their age range from (15-45 year) with mean age (29.422  $\pm$  1.203 year), and their duration of infertility range from (1-13 year) with mean duration of infertility was (3.833  $\pm$  0.284 year). While, in secondary amenorrhea the common cause was PCOS group (No.=33; 36.66%), hyperprolactinemia group (No.=15; 16.66%), PCOS and hyperprolactinemia group (No.=15; 16.66%), ovarian failure group (No.=8; 8.8%), chronic diseases group (No.=6; 6.66%), drugs use group (No.=5; 5.55%), stress group (No.=6; 6.66%), eating disorder group (No.=1; 1.11%), Asherman's syndrome (No.=1; 1.11%).*

*From the results of the present study it may be concluded that the amenorrhea is one of a common problem in reproductive medicine in Iraqi females. The four common causes are PCOS, hyperprolactinemia, ovarian failure and hypothalamic amenorrhea. The most useful initial tests after excluded pregnancy are serum ( FSH, LH, TSH, Prolactin).*

جامعة النهرين

معهد أبحاث الاجنة وعلاج العقم

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة : ايمان حسن فليح حسن

بإشراف : الاستاذ الدكتور سعد صالح الدجيلي

التاريخ: 2011

*Comparison study of ovulation induction and hormone profile using Tamoxifen, clomphen citrate and dexamethason in infertile women*

## SUMMARY

*The objective of this study was to find out protocol for ovulation induction and pregnancy in women complaining from infertility as a result of anovulatory cycle or resistance to ovulate by other type of protocols. These women enrolled intra uterine insemination (IUI) or let them get spontaneous conception. One hundred and four females were enrolled in this study. The females were divided into four groups ; group one 26 women were superovulated by clomiphene citrate (control), group two 26 women were superovulated by clomiphene citrate and dexamethasone tablet, group three 26 women received tamoxifen , group four 26 women took orally administered tamoxifen with dexamethasone. Each woman enrolled in protocol was have serial hormonal profile tests, ultrasonography (U/S) to confirm the maturity of the follicles, ovulation and endometrial thickness and pregnancy outcome. The number of cycle treatment for women undergoing natural copulation were 120 and number of cycle treatment for women undergoing IUI was 100. Sperm washing technique was performed for couples which were fit for IUI ( one hundred ). There was a highly significant ( $P<0.01$ ) differences increase in the follicle size and endometrial thickness after superovulation protocol with tamoxifen (T) alone and T with dexamethasone compared with Clomiphene Citrate (CC) alone and to Clomiphene citrate with dexamethasone (D) . For the hormones, there was a significant difference noticeable rise to normal rates after the use tamoxifen drug alone or with dexamethasone drug . A high significant difference ( $P<0.01$ ) increase in the pregnancy rates for both artificial insemination and by natural pregnancy in the groups of patients used the tamoxifen alone or accompanying with dexamethasone . The*

*pregnancy rate from Intrauterine insemination by ovulation induction with tamoxifen (28%) and tamoxifen with dexamethasone (44%) was significantly higher than that with Clomiphene citrate (8%) and Clomiphene citrate with dexamethasone (16%). Whereas in natural intercourse the pregnancy outcome with tamoxifen alone (30%) tamoxifen with dexamethasone (43.3%) which was significantly higher than that with Clomiphene citrate (6.7%) and Clomiphene citrate with dexamethasone (16.7%). It is concluded from the present work that ovulation induction with tamoxifen alone or with dexamethasone offers a good opportunity success for getting pregnant in women complaining from anovulatory cycle, those who resistance to CC therapy, ovarian hyperstimulation syndrome (OHSS), the female complain from polycystic ovarian syndrome (PCOS) and to somewhat unexplained infertility.*

جامعة النهرين

المعهد العالي لتشخيص العقم والتقنيات المساعدة على الانجاب

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة : ختام مالك عبد الحميد علي

بإشراف : الاستاذ المساعد الدكتور سعد صالح الدجيلي

التاريخ : 2011

*in vitro sperm activation for asthenospermic semen by using progesterone ,  
pentoxifylline and glycyrrhiza glabra extraction*

## SUMMARY

*The objective of this study is to improve certain sperm function parameter in vitro of asthenospermic and other mild male factors infertility by using novel combination motility stimulants substances and measure the quality control test of the best improved medium to be used for artificial insemination in future. One hundred asthenospermic patients were involved in this current study. They were divided randomly into equal four groups. Each semen sample had been divided into two parts. One part was considered as a control by using Ham's F10 medium and the other part was considered as treated group by adding the following substances in combination; pentoxifylline (1mg/ml), progesterone (0.409) mg/ml and Glycyrrhiza glabra (1mg/ml) in the following groups: group 1: PF and G. glabra , group 2: PF and P, group 3: G. glabra and P and group 4: PF, G. glabra and P. Certain sperm function parameters were examined before and following using in vitro wash and spin activation technique. The results revealed highly significant improvement ( $P < 0.001$ ) in the percentage of sperm motility grades (a+b), with a significant improvement ( $P < 0.05$ ) in the percentage of morphologically normal sperm (MNS) and reduction of round cells when using PF and G. glabra medium in comparison with control medium. When the four combination media were compared using the statistical measurements, the best result that shows improvement in certain sperm characters was PF and G. glabra medium. Therefore, quality control tests were done for this medium. The medium was non-toxic. It is concluded that the best combination that could be used as sperm motility stimulants for asthenospermia alone or with other male infertility factors was PF and G. glabra.*

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المعهد العالي لتشخيص العقم والتقنيات المساعدة على الانجاب

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة: ميسون عبد الرحمن جاسم

بإشراف : الاستاذة باسمه محمد الجبوري

الاستاذ المساعد الدكتور نوال خيرى حسين

التاريخ : 2011

**EFFECTS OF DIFFERENT ANTIOXIDANTS (ZINC, VITAMIN E, AND FLAXSEED) ON REPRODUCTION IN MATURE MALE MICE RECEIVING SMALL DOSES OF LEAD**

**Summary**

*The toxic effect of drugs and environmental chemicals on the human reproductive system has become a major health concern. Lead is recognized as the most dangerous of the toxic metals and a major threat to the biological systems of both human and animals.*

*The objective of the present study is to detect the effect of different antioxidants (zinc, vitamin E, and flaxseed) on the toxicity of low dose of lead on reproductive organs of mature male mice.*

*Seventy-five healthy male mice at the age of (7-8) weeks were enrolled in this study. They were divided into five groups (15 mature male mice/group). The first group received distilled water for 6 weeks and considered as negative control. The second group was orally administrated with lead acetate (5 mg/kg body weight /day) for 6 weeks and was considered as positive control. The third group was treated with zinc sulphate (0.5mg/kg body weight /day) and with lead acetate (5 mg/kg) during the 6 weeks period of the experiment. The fourth group received vitamin E (6 mg/kg body weight /day) with lead acetate (5 mg/kg) during the period of the experiment. The fifth group received flaxseed oil (2.5% of total daily food intake) with lead acetate (5mg/kg body weight) daily for 6 weeks.*

*At the beginning of the experiment all the animals were weight, after 6 weeks and at the end of*

*the treatment body weights were recorded then the mice were killed by cervical dislocation; reproductive organs (testis and epididymes) were excised. Both right and left sided organs were weighed, and then both right and left testis were fixed with 10% formal saline for subsequent histological study by preparing paraffin sections of 5-6  $\mu$ m thickness stained with Haematoxylin and eosin. Diameters of 50 seminiferous tubules were calculated for each animal and histopathological observations were recorded for all the studied groups. The right and left epididymes were put in a small Petri dish that contained 1ml global culture media then the epididymes were minced by microsurgical scissor until we got a homogenized solution which contains the spermatozoa. One drop of the suspension was mounted on a warm microscopical glass slide and then examined under high power magnification to determine sperm concentration, sperm motility, and sperm morphology.*

*The present study showed that lead caused a significant reduction in the total body and in the reproductive organs weights, while the concomitant administration of antioxidants (zinc, vitamin E, and flaxseed) cause elevation in these weights as compared to the only lead treated group. Sperm parameters were adversely affected by lead ingestion where sperm concentration, percentage of motile sperm, and percentage of normal sperm morphology were decreased within the epididymes, these parameters, however, improved significantly in the groups treated with lead plus antioxidants. Sperm concentration showed highly significant improvement ( $p < 0.001$ ) in all mice of antioxidants treated groups (zinc, vitamin E, and flaxseed). Progressive sperm motility increased more in vitamin E group, while normal sperm morphology percentage was higher in zinc and flaxseed receiving groups. In the lead-treated group, testicular sections showed highly significant reduction in the diameter of seminiferous tubules with marked degenerative changes while these sections were close to normal in groups treated with lead plus antioxidants.*

*The results of the present study have led us to conclude that lead, like all other heavy metals, could induce oxidative stress and the concomitant administration of antioxidants (zinc, vitamin E, and flaxseed) can ameliorate the toxic effect of lead on spermatogenesis.*

جامعة النهرين

المعهد العالي لتشخيص العقم والتقنيات المساعدة على الانجاب

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة: سحر محسن محمد

بأشراف الاستاذ الدكتور :محمد باقر محمد رشاد فخر الدين

التاريخ : 2011

A current technique for human sperm  
preparation using ALLGrad solution in assisted  
reproductive technologies for infertile couples

*Summary*

*The objectives of the present study were to evaluate the efficacy of two sperm preparation techniques including centrifugation swim-up technique with and density gradient technique, and to assess the IUI outcome using both techniques.*

*One hundred thirty-five infertile couples participated in this study where the male partners needed in vitro sperm preparation and activation, while the female partners were normal and subjected to ovarian stimulation program. The mean ages of infertile males were  $35.614 \pm 0.539$  years with mean duration of infertility of  $6.113 \pm 3.75$  years. In vitro sperm activation was performed using two different techniques, the centrifugation swim-up technique with Global medium and density gradient technique with ALLGrad solution and Global medium. Randomly the infertile males shared in this study were grouped into two groups according to type of technique used in sperm preparation. In the first group, the centrifugation swim-up technique was applied for 70 infertile males while in the other group 65 infertile males have density gradient technique for*

*their in vitro sperm activation. The results of this study indicated that there was an enhancement in sperm parameters post activation using the two different techniques. There was a highly significant enhancement ( $P \leq 0.001$ ) in the percentages of progressive sperm motility and grade (A) progressive sperm motility, and a significant improvement ( $P \leq 0.05$ ) in percentage of normal sperm morphology using density gradient technique compared to centrifugation swim-up technique*

*Intrauterine insemination was applied for the wives of all infertile males involved in this study after having in vitro preparation for their sperm samples, among the 135 couples involved in the present study, 16 couples have positive IUI outcome, 9 couples were in the group used density gradient technique with percentage of (13.8%) which is higher than the percentage of positive IUI outcome in the infertile couples used centrifugation swim-up method where it was (10%) and count of 7 from 70 patients used that technique*

*From the results of this study it was concluded that the density gradient technique with ALLGrad solution and Global medium better in (achieving higher percentages of progressive sperm motility, grade (A) progressive sperm motility, sperm normal morphology and positive IUI outcome than centrifugation swim-up technique with Global medium. However, there was non significant difference between both techniques regarding other sperm parameters.*



جامعة النهرين

المعهد العالي لتشخيص العقم والتقنيات المساعدة على الانجاب

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة: سوسن محمد حمد الله

بإشراف الاستاذ الدكتور : وليد حميد يوسف

التاريخ : 2011

THE ROLE OF ANTIOXIDANTS VITAMIN E  
AND VITAMIN C IN OVARIAN PERFORMANCE IN  
POLYCYSTIC OVARY SYNDROME PATIENTS

Summary

*This study was conducted to investigate the effect of adding antioxidant Vitamin E or C to ovulation induction and compare it with ovulation induction alone in 90 infertile Polycystic ovary syndrome (PCOS) patients who are resistant to clomiphene citrate and attending outpatient clinics at the Institute of Embryo Research and Infertility Treatment, Al-Nahrin University, between October 2009 and March 2011. These patients were divided into three groups; they were scheduled for ovulation induction. The first and second groups' patients received daily Vitamin E (400 IU) and Vitamin C (500 mg), respectively while the third group underwent ovulation induction only. The treatments continue for three cycles. Before starting the treatment, the hormonal profile (LH, FSH, and Testosterone) and lipid profile and marker of oxidative stress (malondialdehyde level MDA) were performed at appropriate times. A group of 10 healthy fertile women with regular cycles scheduled as a healthy control, they were investigated for oxidative stress only. Two*

*main outcomes were analyzed; the primary outcome was ovulation and pregnancy rate while the secondary outcome included the changes in the .hormonal profile, lipid profile and MDA level*

*Addition of Vitamin E to ovulation induction resulted in significant  $P<0.05$ ) increase in ovulation and conception rate. Vitamin C causes no) significant ( $P>0.05$ ) change in conception rate but highly significant  $P<0.001$ ) increase in ovulatory rate. Oxidative stress measured by serum) MDA level, was higher in PCOS patients compared to the healthy control. Vitamin E caused a significant decrease ( $p<0.05$ ) and Vitamin C caused highly significant decrease ( $p<0.001$ ) in MDA level. In patients (treated with Vitamin E for 3 months there was a significant ( $P<0.05$  decrease in serum cholesterol, triglyceride and VLDL, LH level and LH/FSH ratio and highly significant decrease ( $P<0.001$ ) in testosterone level, but no significant changes ( $P>0.05$ ) were observed in HDL, LDL and FSH levels. Vitamin C treatment caused a highly significant  $P<0.001$ ) decrease in serum cholesterol, LDL level and LH/FSH ratio) and a significant ( $P<0.05$ ) decrease in triglyceride and VLDL, LH, and testosterone levels and significant ( $P<0.05$ ) increase in FSH level but no significant ( $P>0.05$ ) change was observed in HDL level. No significant  $P>0.05$ ) change in previous parameter was noticed in patients underwent)*

*.induction of ovulation only*

*It is concluded that oxidative stress is increased in patients with PCOS which was improved by antioxidants Vitamin E and C. Addition of these antioxidants to ovulation induction caused better patients response in term of ovulation and conception rate. Treatments with Vitamin E or C cause an improvement of biochemical (lipid profile) and hormonal derangement of PCOS patients.*

جامعة النهرين

المعهد العالي لتشخيص العقم والتقنيات المساعدة على الانجاب

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة: اسراء مجيد رشيد

بأشراف الاستاذ الدكتور : محمد باقر محمد رشاد فخر الدين

التاريخ : 2012

## Assessment of Sperm Morphology in Relation to Intra-uterine Insemination Outcomes and Cryopreservation

### Summary

*Results: The results showed that there was an enhancement in sperm parameters post-preparation. The normal sperm morphology (%) was highly significantly increased ( $P < 0.001$ ) after preparation than before preparation. According to KSC of sperm morphology, 37.9% of patients had normal KSC value and after in vitro sperm preparation the percent increased to 58.9%.*

*The post-thawing study revealed a highly significant decrease ( $P < 0.001$ ) in the sperm parameters. However, the normal sperm morphology (%) was highly significantly decreased ( $P < 0.001$ ) after cryopreservation (27.96%) than before it (33.29%). While, according to KSC of sperm morphology, 37.9% of patients had normal KSC*

*value and the percent decreased to 32.7% after cryopreservation.*

*Pregnancy occurred in 14.7% cases after IUI.*

*Conclusions: From the results of this study, it was concluded that the largest group of infertile male was in the asthenozoospermic patients. The using of Kruger strict criteria is better than traditional method for assessment of sperm morphology. The using of Spermac<sup>TM</sup> stain in assessment of human sperm morphology is considered easy and simple technique with high resolution. Enhancement sperm parameters and value of Kruger strict criteria post in vitro preparation. After cryopreservation the sperm parameters worsen especially the sperm morphology. In addition, the pregnancy rate after intrauterine insemination was high in patients with normal sperm morphology according to Kruger strict criteria.*

جامعة النهرين

المعهد العالي لتشخيص العقم والتقنيات المساعدة على الانجاب

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة: عواطف عبد الرسول موسى

بإشراف الأستاذ الدكتور : محيسن حسن عداي

التاريخ : 2011

## Evaluation of the effect of aqueous extract of *Tribulus terrestris* on some reproductive parameters in female mice

### Summary

*The aqueous extract of Tribulus terrestris was evaluated for its activity on the reproductive system of mature albino female mice. Two experiments involved maternal treatment with the extract (orally) for two and four weeks with two dose levels (100 and 200 mg/kg/day) at each period were conducted. Different ovarian and uterine parameters were studied in addition to determination of FSH, LH and estradiol hormone levels during the estrus phase.*

*The two weeks period experiment revealed no significant differences in maternal body weight or reproductive organs weight. A significant increase in the number of growing follicles, diameter of mature follicles, endometrial lining cells height and endometrial glands diameter was obtained in both dose levels.*

*The four weeks period experiment showed a remarkable increase in body weight and reproductive organs weight in both dose levels. No significant differences on the levels of ovarian parameters, whereas a significant increase was obtained in the endometrial lining cells height on both dose levels and a significant increase in endometrial glands diameter in the highest dose level.*

*As concerning the levels of reproductive hormones, although the differences were not significant, but an obvious increase was obtained in FSH and LH and a decrease in estradiol was detected in both dose levels.*

*In conclusions, although there were some fluctuations, a dose dependent activity was obtained with the two weeks period seems to be more effective on both ovarian and uterine parameters, whereas the four weeks period was more effective on uterine parameters.*

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رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة: ابتسام محمد خضير الطائي

بأشراف الاستاذ الدكتور : سعد صالح الدجيلي

التاريخ : 2011

## Impact of Semen Cryostorage on Intrauterine Insemination Outcome

### Summary

*The objective of this study was to investigate the efficacy of 30% human serum albumin (HSA) mixed with modified tris solution (MTS) on maintaining the viability and fecundity of husband's semen at 5°C after 24 hr cryostorage after ejaculation, and compare the efficacy of this solution on infertile and fertile samples. Study also the pregnancy rate. Washed semen after 24 hr cryostorage prepared for patients complained from normozoospermia and unexplained infertility. Eighty six infertile couples with apparently normal wives underwent 122 intrauterine insemination cycles. These wives were randomized into two groups: In group I: 50 women underwent a single (IUI), while in group II: 36 women underwent repeated IUI.*

*The semen samples involved in two experiments: Experiment No. 1: Studied the efficacy of 30% HSA with MTS on certain sperm's function parameters, and experiment No. 2: Studied the effect of same solution on these parameters of fertile and infertile patients.*

*The results showed a highly significant ( $P<0.001$ ) improved of all certain sperm's function parameters of washed compared with unwashed semen after 24 hr cryostorage. It showed also improvement of all these parameters of fertile compared with infertile semen. There was a highly significant ( $P<0.001$ ) increase in the percentage of grade A and grade B active sperm motility of washed cryostored semen compared with 30 min in vitro activation, and unwashed semen after 24 hr cryostorage. There was a significant ( $P<0.05$ ) improve in pregnancy rate by inseminated cryostored semen for repeated IUI (15/36 repeated cycle, 41.7%) compared with single IUI (10/50 cycle, 20%).*

*It is concluded that the use of 30% HSA with MTS maintains adequate sperm viability and fecundity after 24 hr of cryostorage, and it was extremely convenient for patients requiring IUI in different circumstances. The significantly better pregnancy rate from repeated IUI with prepared cryostored semen supports this treatment option.*



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رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة: هند سعدون لطيف

بإشراف الاستاذ الدكتور : عدنان صالح الجنابي

التاريخ : 2011

## Effect Of Oxytocin On Semen Used For Human Artificial Insemination

### Summary

*Oxytocin (OT) holds the distinction of being the first naturally occurring peptide hormone to be synthesized*

*The aim of this study is to evaluate the effect of oxytocin addition on sperm characteristics (exp. I). Several concentrations were tried ( 0.25 , 0.5 IU/ml) on activated sperm using simple layer activation technique with 0.75 min. incubation (n= 60 semen samples) . The results of this experiment 5 showed no significant differences regarding sperm concentration , grades of motility and sperm morphology*

*Another experiment (exp. II) is done to evaluate the effect of oxytocin addition to activated sperm using simple layer technique before IUI . One hundred infertile patients with asthenospermia were involved in this study during their attendance at institute for Embryo Research and Infertility Treatment/ Al- Nahrain University . From each infertile males , semen*

*samples were taken , assessment of SFA parameter was done, In vitro sperm activation was performed using simple layer technique , addition of 0.5 , 0.75*

*IU/ ml of oxytocin to the activated sperm and IUI was done (n=100 infertile patients) (50 for each concentration of oxytocin).Clinical pregnancy was 12% out of 100 patients comparing to the 50 control group without addition of oxytocin which was 4%. Moreover, clinical pregnancy in those with 0,5 IU/ml . was 14% and those with 0.75IU/ml was 10%*

*The effect of age , duration of infertility , smoking habit , number of IUI trails and degree of consanguinity are studied, crude data are statistically .analyzed*

*The mean age of infertile subjects was (36.29) years . The (3-4) years duration of has the largest number of infertile couples and percentage of . smoker is 55% higher than percentage of non smoker which was 45% Couples with primary infertility are 77% which are higher than those with secondary infertility 23% , and the patients with second trail of IUI have higher percentage 51%. Patients with no varicocele have a higher percentage than those with varicocele 25% and consanguineous couples have a %75 higher percentage 56% comparing to non –consanguineous couples .In the (present study, 12 pregnancies are reported ,according to age group (21-30 have a higher pregnancy percentage 50.3% and those with duration of infertility <2 years have the best percentage 41.7% and those with secondary infertility have the best IUI outcome 66.7% and those with no varicocele had*

*a higher pregnancy rate 66.7% , those with second trails have the best pregnancy rate 33.3% and those non smoker infertile patients had a higher*

*pregnancy rate (58.5%) than smoker . Non consanguineous couples had a .higher pregnancy rate than consanguineous couples which was 66.7% These results indicated that Oxytocin( OT) addition to sperm is of beneficial effect in intrauterine insemination (IUI).*

جامعة النهرين

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رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة: اسراء مجيد رشيد

بأشراف الاستاذ الدكتور : محمد باقر محمد رشاد فخر الدين

التاريخ : 2012

## Assessment of Sperm Morphology in Relation to Intra-uterine Insemination Outcomes and Cryopreservation

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*Results: The results showed that there was an enhancement in sperm parameters post-preparation. The normal sperm morphology (%) was highly significantly increased ( $P < 0.001$ ) after preparation than before preparation. According to KSC of sperm morphology, 37.9% of patients had normal KSC value and after in vitro sperm preparation the percent increased to 58.9%.*

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*Conclusions: From the results of this study, it was concluded that the largest group of infertile male was in the asthenozoospermic patients. The using of Kruger strict criteria is better than traditional method for assessment of sperm morphology. The using of Spermac<sup>TM</sup> stain in assessment of human sperm morphology is considered easy and simple technique with high resolution. Enhancement sperm parameters and value of Kruger strict criteria post in vitro preparation. After cryopreservation the sperm parameters worsen especially the sperm morphology. In addition, the pregnancy rate after intrauterine insemination was high in patients with normal sperm morphology according to Kruger strict criteria.*

جامعة النهرين

المعهد العالي لتشخيص العقم والتقنيات المساعدة على الانجاب

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة: ليلى خضر غالب

بإشراف الاستاذ المساعد الدكتور: نوال خيري حسين

التاريخ : 2012

## **Measurement of Serum Inhibin B as a Predictive Evaluation of Ovarian Response Following Ovulation Induction Program in Assisted Reproductive Techniques**

### **Summary**

#### ***Back Ground***

*Infertility is a common medical and social problem in the world. So the evaluation of ovarian reserve has been, and still, the focus of substantial clinical research. The assessment of ovarian reserve is valuable for determining stimulation protocols , and because of limited predictive value of age alone, or other passive hormonal analysis in estimating response to the exogenous stimulation, dynamic researches were done on serum inhibin B.*

#### ***Objectives***

*Measurement of serum inhibin B as a predictive evaluation of early ovarian response following ovulation induction program in the Assisted Reproductive Technology (ART)*

#### ***Materials and Methods***

*Fifty patients were involved in this study which was divided in to two studies; study A was designed for 30 patients involved in intra uterine insemination (IUI) program. This part is also subdivided into two groups: in group (1) 15 of them were superovulated by Gonadotropin(Gn) recombinant follicle -stimulating hormone (rFSH). While in group (2), 15 women were treated by Clomiphene citrate (CC) . Study B (group 3) was designed for 20 women were involved in program of in vitro fertilization ( intra cytoplasmic sperm injection ICSI procedure). The women in this group were divided to Poor response group (follicle number  $\leq 4$ , Normal response group (follicle number 5-15) and High response group (follicle number  $> 15$ ) according to the ovarian response(follicle number). Serial hormonal profile tests inhibinB, Estadiol (E2) , FSH, Luteinizing hormone (LH) were done at days 3, 7 of the menstrual cycle and the day of human chorionic gonadotropin hormone (hCG) injection with recurrent ultrasonography (U/S) to confirm the number and development of the follicles.*

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رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة: بتول حسين كاظم

بإشراف الاستاذ الدكتور : وليد حميد يوسف

التاريخ : 2012

## **Serum Leptin level in women with Polycystic Ovary Syndrome before and after treatment with metformin**

### **Summary**

*Polycystic ovary syndrome is the most common endocrinopathy in women, affecting 5–10% of women of reproductive age .The principal features of PCOS are anovulation, resulting in irregular menstruation, amenorrhea, ovulation-related infertility , and polycystic ovaries; excessive amounts or effects of androgenic hormones.*

*Leptin, a key hormone in energy homeostasis and neuroendocrine function, has a permissive role in the pathogenesis of reproductive dysfunction.*

#### ***Aim of the study***

*To assess the role of serum leptin in women with PCOS and to evaluate leptin levels in PCOS women before and after treatment with metformin.*

#### ***Materials and Methods***

*This prospective experimental study included 60 women of reproductive age (18-38years) were allocated to four groups: 15 obese women with PCOS (BMI >30 kg/m<sup>2</sup>), 15 obese controls, 15 non-obese women with PCOS (BMI 18-30 kg/m<sup>2</sup>), and 15 non-obese controls. Serum leptin and insulin levels were measured and compared between case and control subjects also comparison done before and after treatment with metformin.*

#### ***Results***



*There was a significant increase in leptin in non-obese PCOS group ( $8.2 \pm 2.73$ ) compared to non-obese control ( $5.64 \pm 1.43$ ), ( $P$  value= $0.0032$ ), insulin level was significantly higher in PCOS group ( $15.87 \pm 6.65$ ) than*

*control ( $5.47 \pm 1.68$ ), ( $P$  value $<0.001$ ). There was significant decrease in BMI, leptin and insulin levels*

*after 12 weeks of metformin treatment in obese and non-obese PCOS subjects.*

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رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة: مي عبد الكريم جبارة

بأشراف الاستاذ الدكتور: سعد صالح الدجيلي

التاريخ : 2012

*Correlation Between In Vitro Preparation Technique, Endometrial Thickness, Hormonal Profile And Pregnancy Rate With IUI Outcom*

## Summary

### **Background**

*Intra uterine insemination isa simple and effective method to overcome the infertility. Although the equipment's and methods of Assisted Reproductive Technologies (ART) are highly developed, the percentage of successful IUI live-births does not exceed 20-30%*

### **Objective**

*This work is designed to evaluate the retrospective results which can be applied for prospective study. the present study aim to:*

- 1- Examine the effect of in vitro preparation techniques on IUI outcome.*
- 2- Elucidated the correlation between Graffian follicular criteria as number and size, endometrial thickness and hormonal profile with pregnancy rate following IUI.*

*3-The level of reproductive hormones Lutenization hormone, estradiol hormone(L.H,E2) will be determined before HCG injection*

#### *Materials and Methods*

*Retrospective study calculate one hundred cases of infertile couples who were became pregnant following IUI in the high Institute of Infertility Diagnosis and Assisted Reproductive Technologies, between January 2007 and January 2010. Depending on the results of retrospective study, IUI was achieved for 100 infertile patients between August 2010and June 2011.The mean of significant prognostic variables were measured in both studies namely:age, type of infertility, type of sperm activation techniques ,the protocol of ovulation induction medicine, the mean of hormonal status of Luteinizing Hormone (LH), Estradiol(E2), and number and diameter of follicles, endometrial thickness cycle day before HCG injection.*

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رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة: احلام حمادي عيسى

بإشراف الاستاذ الدكتور: وليد حميد يوسف

التاريخ : 2012

### The Role of Leptin in oligozoospermic Men

## Summary

### *Back ground*

*Leptin is an adipocyte –secreted protein that participates in the regulation of energy homeostasis. It prevents the body from storing fat, controls hunger and cravings, regulates food intake and energy expenditure, provides the body with an index of nutritional status and controls the whole body fat metabolism. Leptin is a product of ob gene created by adipocytes. It seems to signal metabolic information to the reproductive system.*

### *Objective*

*The aim of this study is to evaluate the relationship between serum leptin and infertility in oligozoospermic men.*

### *Material&method*

*Seventy men were investigated; fertile normozoospermia as a control (n = 35) and infertile oligozoospermia (n =35). The patients underwent estimation of body*

weight (kg), height (cm), calculation of body mass index (BMI), semen analysis, serum FSH, LH, testosterone, serum Leptin lipid profile and serum MDA.

The infertile group given a treatment course of Clomiphene citrate (50 mg) & vitamin E (400mg) and then all the previous parameters reevaluated after 3 months.

## Result

Mean body weight was significantly higher in infertile oligozoospermia compared to controls.

Mean height showed no significant difference between the two groups.

Hormonal profile reveals significant difference in FSH value between control group and oligozoospermic group mean =  $(7.79 \pm 4.20)$  versus  $3.35 \pm 1.47$  mIU/ml ( $P=0.0001$ ) but after treatment there is a slight non-significant decrease in the level of FSH in oligozoospermic group ( $P=0.231$ ). The level of testosterone showed a statistically significant difference between fertile normozoospermic ( $5.52 \pm 1.29$ ) and infertile oligozoospermic ( $2.40 \pm 0.96$ ) ( $p=0.0001$ ). This hormone showed a significant increase in its level after treatment ( $3.48 \pm 1.56$ ) ( $p=0.0001$ ).

Other hormone reveals no significant difference between the two groups pre and after treatment.

Lipid profile measurement showed no significant difference between the two groups, regarding malondialdehyde (MDA) measurement there is no significant difference between the control and the infertile, means;  $4.69 \pm 1.32$  vs.  $5.35 \pm 1.19$   $\mu\text{mol/L}$  respectively ( $P=0.477$ ). But after treatment the measurement showed a mild significant decrease to  $4.30 \pm 0.67$   $\mu\text{mol/L}$  in comparison to the level in control group ( $P=0.026$ ) and also a significant decrease in comparison to the level in pretreatment group ( $P=0.0001$ ).

Infertile oligozoospermia had significantly higher mean serum Leptin level than controls (mean  $\pm$  SD;  $3.62 \pm 1.00$ ,  $8.08 \pm 1.22$  ng/ml),  $P < 0.0001$ .

## Conclusion

Serum Leptin demonstrated significant positive correlation with age, body weight, BMI and significant inverse correlation with serum testosterone. It had nonsignificant correlation with the height and sperm concentration. These results are suggestive of a link between the adipocyte derived hormone, Leptin and male fertility.

جامعة النهرين

المعهد العالي لتشخيص العقم والتقنيات المساعدة على الانجاب

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة: حسين خليفة كاظم

بإشراف الاستاذ المساعد الدكتور: نوال خيري حسين

التاريخ : 2012

Treatment of Oligozoospermic Patients with

A Formulation of Plant Origin(Speman)

## Summary

**Background :** *Assessment of sperm concentration as a component of semen analysis is one of the most important steps in the evaluation of male in &infertile couples so that Oligospermia is a decrease in the numbers density of spermatozoa produced by testes (< 20 mill/ml). Speman is formulation of plant origin with no side effects and has been tried for oligospermia, asthenospermia, enlarged prostate, azoospermia*

**Objective:** *To asses the effect of speman on*

*Pituitary –gonadal hormones 2-On the certain sperm parameters-1*

**:Pateint and Material**

*A prospective study was conduct on forty oligospermic patients attended the High Institute of Infertility Daignosis and Assested Reproductive Technologies/Al-Nahrain University for period between first September*

to September 2012 , the mean age 35 years and with duration of 2011 infertility ranged between 1.5—12 years .The patients were considered oligospermic if the sperm concentration was less than 20 million/ml according to WHO 1999 criteria . Speman drug was administered at a dose of 2 tablets, three time daily for three months. Semen analysis , particularly certain sperm parameter( sperm density , motility and morphology) and Hormonal assay of serum levels of testosterone , Follicls stimulating and . Leutinzing hormons was conducted before and after treatment (Results:The results showed there was a highly significant ( $p < 0.001$ ) increase in the means of sperm density (19.90 million\ml) was observed after 3months of Speman treatment. Regarding the sperm motility particularly grade-A was showed a significant( $<0.05$ ) improvement after treatment, and grade-A+B were improved ( 50.27%) after (%31.87) treatment.The morphology of sperm was significantly ( $<0.05$ ) reduced after treatment . The mean serum level of testosterone and( %31.50) Luteinizing hormone were showed a significant ( $<0.05$ ) increased (6.24 .ng\ml) and ( 3.98  $\mu$ IU/ml) after treatment respectively Regarding it is affect on follicle stimulating hormone were about 22.5% of cases shows high serum level of FSH so that the speman , significantly reduced follicle stimulating hormone (5.69  $\mu$ IU/ml) after ( $0.05 <$ ) treatment i.e decreasing serum level by negative feed back mechanism on hypo-thalamic-pituitary-testicular axis due to increased serum level of LH which inturn lead to increased testosterone that causes decreased serum . level of FSH

**Conclusion:** speman may improve the sperm density , motility and

*morphology due to improvement of testicular function and male accessory genital gland by influencing of testosterone hormone which caused the serum level of FSH to be normal through feed back mechanism and increasing serum level of LH.*



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رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة: فرقد عبد الحسين طاهر

بإشراف الاستاذ فاخر سلمان العاني

الاستاذ المساعد : حنان ضايح الجبوري

التاريخ : 2012

## **The Role of E-Cadherin in Implantation and Its Site in the Endometrium**

### **Summary**

*Background: Endometrial receptivity is defined as a temporary unique sequence of factors that make the endometrium receptive to the embryonic implantation. Histological evaluation, now considered to add little clinically significant information, should be replaced by functional assessment of endometrial receptivity. A large number of functional molecular mediators have been identified to date, including adhesion molecules. Thus, endometrial biopsy samples can be used to identify molecules associated with uterine receptivity to obtain a better insight into human implantation.*

*Objective: The aim of the present study is to investigate E-cadherin expression in the endometrium throughout the menstrual cycle of fertile females and to compare the Positivity Index (PI: number of immunostained cells/ total number of cells ) in the proliferative phase with patient having primary infertility with failed in vitro fertilization (IVF) or intra uterine insemination (IUI), also to compare the PI of E-cadherin in endosalpinx between ectopic pregnancy and normal tubes.*

*Patients, Materials and Methods: Fractional endometrial biopsies were taken from anterior, posterior, fundal walls, and the cervix of (32) fertile females (control) and (75) patients with primary infertility who have failed IVF (N=33) and failed IUI (N=42). The immunohistochemistry(IHC) stained tissue is analyzed using computerized image analysis for measurement of PI of E-cadherin in different days of menstrual cycle and compared between the three groups. PI of E-cadherin in the endosalpinx in cases of ectopic pregnancy was also compared with that of normal tubes.*

*Results: E-cadherin expression is up regulated in the proliferative phase and downregulated in the secretory phase. The PI of E-cadherin in the glandular epithelium of the anterior wall is significantly higher than that of posterior and fundal walls in the control group ( $P=0.037$ ). The PI of E-cadherin of the endocervical epithelium is significantly higher than that of the three walls of the endometrial cavity in control, failed IVF and IUI groups ( $P=0.004$ ,  $0.002$ ,  $0.001$  respectively). The PI of E-cadherin expression in the stromal epithelium of the fundal wall is significantly higher than that of anterior and posterior walls in failed IVF group ( $P=0.001$ ). The PI of E-cadherin in the endosalpinx significantly lower in ectopic pregnancy than normal tubes ( $P=0.001$ ).*

*Conclusions: E-cadherin might have a role in implantation.*

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رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة: شغاف ابراهيم محمد

بإشراف الاستاذ الدكتور: سعد صالح الدجيلي

التاريخ : 2012

*Intrauterine Insemination Using Albumin Density Gradient Centrifugation*

## Summary

### **Back ground:**

*Ericsson method is used to determine whether enriched sperm samples would result in offspring of a desired gender. It is used in approximately 50 centers in the United States and in many centers worldwide when scientists and andrologists discovered that sperm samples with high concentrations of either X or Y bearing sperm could be obtained.*

### **Objective:**

*To examine the effect of Ericsson method on gender selection following intra-uterine insemination (IUI) for infertile couples.*

### **Materials and Methods:**

*This study was carried out in the High Institute of Infertility Diagnosis and Assisted Reproductive Technology, Al-Nahrain University, from October 2011 to July 2012. At first semen analysis was done for twenty randomly*

*selected patients and tested for the best sperm parameters using three albumin discontinuous density gradients techniques the 6-16%, 7-17% and 8-18% and the best results obtained with 7-17% .*

*One hundred infertile couples were included in this study. For Women, the Estradiol (E2) hormone was measured, and the number and diameter of follicles with endometrial thickness were detected by ultrasound examination at day thirteen of menstrual cycle, before hCG injection. Semen analysis was done for all husbands and, density gradient technique with 7% and 17% albumin concentration was performed for sperm selection in vitro. Then IUI was accomplished and pregnancy test was done following 15 days of insemination to detect the level of hCG. The gender of fetus was detected by ultrasound examination from sixteen weeks gestation onward.*

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رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة: نضال سالم علوان

بإشراف الاستاذ الدكتور: سعد صالح الدجيلي

التاريخ : 2012

Relationship between *in vivo* Concentrations of Activin-A, Follistatin and AntiMüllerian Ovarian Hormones with Pregnancy Rate Following Intrauterine Insemination

## Summary

**Background:** Anti-Mullerian hormone (AMH), activin A, and follistatin (FS) have been found to play an important role in folliculogenesis, oocyte maturation and corpus luteum function by changing the pattern of granulosa cell expression which in turn affects the success of fertilization potential.

**Objective:** To study the relation of *in vivo* concentrations of AMH, activin A, and FS hormones on the different phases of menstrual cycle and to elucidate the relationship of these hormones with pregnancy rate following intrauterine insemination (IUI).

**Material and Methods:** This study was conducted at the High Institute for Infertility Diagnosis and Assisted Reproductive Techniques, Al-Nahrain University through the period from September 2011 to May 2012. Seventy seven infertile couples were divided into two groups according to infertility causes and age of the females ranging between 20-40years. Group one consists of 12 infertile couples in whom the males were infertile (fertile spouse). Group two consist of 65 couples in whom the females were infertile which further subdivided into two groups. The first

*group included 50 females with anovulatory cycles, and the second group included 15 females presented with unexplained infertility. Serum AMH, activin A, and FS hormones levels were measured at day's 2-5 of the menstruation and then activin A, and FS hormones levels only were measured at cycle day (CD) 12-14 and then CD 28. IUI performed 36-40 hours after HCG injection, and the three hormones was measured after successful IUI.*

*Result: There was no significant relationship between AMH level and pregnancy rate. There is a significant progressive increment in the levels of activin-A during the phases of menstruation reaching maximally after pregnancy if occurred with a predictive cutoff value of 397.5 ng/ml at CD 28. No significant relationship was found between follistatin levels during the phases of the menstruation and with pregnancy rate but there is a significant correlation between follistatin levels CD 13 and pregnancy rate with a cut off value 0.20ng/ml to predict pregnancy.*

*Conclusion: Activin-A can be regarded as a biomarker indicator for diagnosing very early pregnancy at luteal phase. Follistatin level CD13 has the most cut off value to predict pregnancy following IUI. Thorough studies are recommended to prove this prediction values in IVF programs through the measurement of these hormones.*

جامعة النهرين

المعهد العالي لتشخيص العقم والتقنيات المساعدة على الانجاب

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة: امال احمد خضر

بإشراف الاستاذ المساعد الدكتور: نوال خيرى حسين

التاريخ : 2012

## **The Dignostic Value of Anti-Mullerian Hormon in Female Infertility Evaluation**

### **Summary**

#### **Back Ground**

*Infertility is a common medical and social problem in the world. So the evaluation of ovarian reserve has been, and still, the focus of substantial clinical research. The assessment of ovarian reserve is valuable for determining stimulation protocols , and because of limited predictive value of age alone, or other passive hormonal analysis in estimating response to the exogenous stimulation, dynamic researches were done on serum Anti-Mullerian Hormone (AMH).*

#### **Objectives**

*To investigate whether Anti-Mullerian hormone and antral follicle count can be useful in predicting the ovarian reserve and pregnancy outcome in assisted reproductive technology cycles.*

#### **Materials and Methods**

*This study was carried out in High Institute of Infertility Diagnosis and Assisted Reproductive Technologies \ AL- Nahrain University, Baghdad-Iraq ; during the period from August/2011 to August/2012 .*

*Hundred women were involved in this study which was divided to treatment groups in addition to control group. Control group (group one) was designed for 25 fertile women. The treatment groups divided to three groups; group (2) was designed for 25 patients superovulated insemination (IUI) . Group (3) was designed for 25 patients superovulated by (CC) involved in (IUI) program . Group 4 was designed for 25 patients was superovulated by Gonadotropin(Gn) recombinant follicle -stimulating hormone (rFSH) and (CC) involved in (IUI) program. Serial hormonal profile tests AMH, Estradiol (E2) , Follicle-Stimulated Hormones(FSH), Luteinizing hormone (LH) were done at days 2, 12 of the menstrual cycle which is the day of human chorionic gonadotropin hormone (hCG) injection with Transvaginal ultrasonography (TVU) to confirm the number and size of the mature follicles.*

### **Results**

*The ages of the all study groups range between 19-39 years. There was no significant difference ( $P=0.537$ ) in age between the control and the treated groups. There was a significant ( $P<0.001$ ) negative correlation between the age and AMH value in the control group and patients group that means with increase in age , there is a decrease in AMH value.*

*by Clomiphene citrate (CC) without intra uterine*

*In comparison between AMH level on day 2 and day12 of cycle in treated groups , there were significant differences between AMH level in both days( $P<0.001$  for day 2,  $P<0.001$  for day 12 respectively). In correlation between AMH and FSH on day 2 of the cycle and day 12 of the cycle, there was a significant( $p<0.001$ ) negative correlation between the two hormones in the four groups. The correlation between AMH and antral follicle count (AFC) on day 2 of the cycle, there was a significant positive correlation between the two variables in control and patients groups.*

### **Conclusion**

*It was concluded that serum AMH and antral follicle count(AFC) are valuable marker for ovarian reserve. AMH has significant positive correlation with AFC, E2 (day 12), and mature follicle (MF) which mean with increase AFC, E2 and MF, AMH increase. AMH has a significant negative correlation with FSH (day 2, 12), LH (day 2,12), and age which means that when FSH,LH and age increase; AMH decrease. AMH is significantly higher in day 12 than day 2 of the cycle after ovulation induction. Pregnancy rate does not correlate with ovarian*



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المعهد العالي لتشخيص العقم والتقنيات المساعدة على الانجاب

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحث : معنز صباح احميد

بإشراف الاستاذ الدكتور انعم رشيد الصالحي

الدكتورة

ثريا حسام الدين عبد الله

التاريخ : 2012

Serum and Follicular Fluid Leptin levels as A correlation with Pregnancy Rate in Women  
undergoing ICSI-Cycles

## Summary

### *Back Ground*

*Infertility is a common medical and social problem in the world. So the evaluation of ovarian reserve has been, and still, the focus of substantial clinical research. The assessment of ovarian reserve is valuable for determining stimulation protocols , and because of limited predictive value of age alone, or other passive hormonal analysis in estimating response to the exogenous stimulation, dynamic researches were done on serum Anti-Mullerian Hormone (AMH).*

### *Objectives*

*To investigate whether Anti-Mullerian hormone and antral follicle count can be useful in predicting the ovarian reserve and pregnancy outcome in assisted reproductive technology cycles.*

## *Materials and Methods*

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## *Conclusion*

*August/2012 .*

*It was concluded that serum AMH and antral follicle count(AFC) are valuable marker for ovarian reserve. AMH has significant positive correlation with AFC, E2 (day 12), and mature follicle (MF) which mean with increase AFC, E2 and MF, AMH increase. AMH has a significant negative correlation with FSH (day 2, 12), LH (day 2,12), and age which means that when FSH,LH and age increase; AMH decrease. AMH is significantly higher in day 12 than day 2 of the cycle after ovulation induction. Pregnancy rate does not correlate with ovarian*

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المعهد العالي لتشخيص العقم والتقنيات المساعدة على الانجاب

رسالة الدبلوم العالي ( المعادل للماجستير ) في التقنيات المساعدة على الانجاب

الباحثة: وفاء محمد عبد

بإشراف الاستاذ الدكتور: سعد صالح الدجيلي

التاريخ : 2012

Role of Fibrillin-3 in Fertilization Capacity in women undergoing Intrauterine Insemination

## Summary

**Background :** *Fibrillin- 3 is more recently discovered glycoprotein hormone believed to be located mainly in the brain and now it has been located in the gonads and there are no studies till now regarding its role on fertilization capacity in infertile women undergoing intrauterine insemination*

**Objective:** *The goals of this study are concentrated on the fertilization capacity parameters by examining the effect of endogenous concentration of fibrillin-3 hormone on the ovarian status at different menstrual cycle phases. Furthermore, to*

*elucidate the correlation between the levels of this hormone in infertile women following Intra-uterine insemination (IUI) outcome or through natural pregnancy .*

**Materials and Methods:** *Ninety infertile couples were involved in this prospective study through the period from November 2012 to May 2013. The couples were divided according to the type of insemination and ovulation induction program into three groups: Group(1): Thirty spouses were induced ovulation stimulation by using clomiphene citrate(CC) and recommended for natural coitus. Group(2): Thirty couples, the females were induced ovulation stimulation by CC, recombinant FSH and highly purified FSH with IUI. Group(3): Thirty couples were included, the women have induced ovulation stimulation by CC with IUI. Measurement of Fibrillin-3*

*with other reproductive hormones were done at different phases of menstrual cycle and for pregnant and non-pregnant women following natural coitus and IUI .*

*Results: The mean of fibrillin-3 hormone at cycle day 2 of menstrual cycle was 3.7ng/mL (range between 3.50 to 3.91 for the three groups. The mean of fibrillin-3 hormone at cycle day 13 was 6.6ng/mL (ranged from 5.83 to 7.0). Whereas, the basal level of Fibrillin-3 at 14 days after mid cycle natural coitus and IUI was 3.3ng/mL (range between 2.76, 3.95 and 3.29) for three groups respectively. There was no significant difference in the mean of Fibrillin-3 hormone between pregnant and non-pregnant women through the phases of menstrual cycle or among the three groups .*

*Conclusions: The present study concluded that Fibrillin -3 hormone has no role in fertilization and pregnancy, but it may have a main relationship with E2 during folliculogenesis , oocyte maturation and follicular contents. Therefore ,this hormone may be one of the new hormones that interfere with fertilization capacity.*