

factor of successful sperm retrieval is patient age thus suggesting the possible benefits of anticipating surgery for sperm banking earlier in the life of these patients.

688 IN VITRO COLONIZATION OF SPERMATOGONIAL STEM CELLS: THE EFFECT OF PATIENT'S CLINICAL CHARACTERISTICS AND TESTICULAR HISTOLOGY

Nowroozi M.R.¹, Ahmadi H.¹, Rafiiian S.¹, Mirzapour T.², Dabiran S.³, Movahedin M.⁴
¹*Uro-Oncology Research Center, Dept. of Urology, Tehran University of Medical Sciences, Tehran, Iran,* ²*Institute of Bioscience, Putra University, Selangor, Malaysia,* ³*Department of Community Medicine, Tehran University of Medical Sciences, Tehran, Iran,* ⁴*Department of Anatomical Sciences, Medical Sciences Faculty, Tarbiat Modares University, Tehran, Iran*

Introduction & Objectives: In vitro human spermatogonial stem cells (SCCs) culture has emerged as a suitable method for pluripotential germ cells propagation which can be used to induce fertility in men who became infertile due to anticancer treatment during childhood. The objective of the study was to evaluate the effect of pathologic and clinical parameters on in vitro SSCs colonization for the first time.

Materials & Methods: SSCs were isolated from testicular biopsies of 47 Iranian infertile men with non-obstructive azoospermia and co-cultured with Sertoli cell monolayer. Age, duration of infertility, previous medical/surgical history, and testicular size and pathology were recorded and compared between patients with and without colony formation. As the main outcome measure, the number and size of SSCs colonies were compared with respect to the recorded parameters in days 8, 13, and 18 after cultivation.

Results: There was no difference between patients with and without SSCs colony regarding clinical parameters. Twenty three (74.2%) men with SSCs colony had maturation arrest at secondary spermatocyte and spermatid stages while all samples in the other group had maturation arrest at primary spermatocyte stage. ($P < 0.001$) The number and size of SSCs colonies increased with time. (6.8 ± 3.6 vs. 8.9 ± 4.5 , 11.4 ± 4.3 and $110.3 \pm 29 \mu\text{m}$ vs. $131 \pm 44.7 \mu\text{m}$ vs. $157.1 \pm 58.5 \mu\text{m}$; $P < 0.001$) The number and size of SSCs colonies were significantly higher in men with maturation arrest at spermatid stage when compared to those with other pathologic diagnosis in days 8, 13, and 18 after cultivation. ($P < 0.001$) Clinical parameters had no significant effect on SSCs colony formation.

Conclusions: Limited number of participants was the main limitation of the study. Infertile men with maturation arrest at spermatid stage were appropriate candidates for biopsy and in vitro propagation of SSCs, regardless of their clinical history.

689 DOES VARICOCELE REPAIR IMPROVE MALE INFERTILITY? AN EVIDENCE-BASED PERSPECTIVE FROM A RANDOMIZED CONTROLLED TRIAL

Abdel-Meguid T.A., Al-Sayyad A.G., Tayib A.M.S., Farsi H.M.A.
King Abdulaziz University Medical City, Dept. of Urology, Jeddah, Saudi Arabia

Introduction & Objectives: Background: Randomized-controlled trials (RCTs) addressing varicocele treatment are scarce with conflicting outcomes. Objective: To determine whether varicocele treatment is superior or non-superior to no-treatment in male infertility; through an evidence-based perspective.

Materials & Methods: Design and Setting: A prospective, non-masked, parallel-group, RCT with 1:1 concealed computer generated random-allocation; conducted at authors' institution between February 2006 and October 2009. Participants: Married men, 20-39 yr old, with infertility ≥ 1 yr, clinically palpable varicoceles, and impaired at least one semen parameter (sperm density $< 20 \times 10^6/\text{ml}$, progressive motility $< 50\%$ or normal morphology $< 30\%$) were eligible. Exclusions were men with subclinical or recurrent varicoceles, normal semen parameters, azoospermia, abnormal hormonal profile, additional causes of infertility, female partner infertility, female partner ≥ 35 yr old; or who refused randomization. Sample size analysis prior to study commencement suggested 68 participants per arm with statistical power of 80% and alpha level at 5%. Intervention: participants were randomly allocated to observation (control arm; CA) or subinguinal microsurgical varicocelectomy (treatment arm; TA). Semen analyses were obtained at baseline (3-analyses); and at follow-up months 3, 6, 9 and 12. Mean of each sperm parameter at baseline and follow-ups were determined. Measurements: Spontaneous pregnancy rate (primary outcome); changes from baseline of mean of semen parameters, and occurrence of adverse effects (AEs) (Secondary outcomes) during 12-months follow-up. $P < 0.05$ was significant.

Results: Analysis included 145 participants (CA=72; TA=73) with mean \pm SD age=29.3 \pm 5.7 (CA), and 28.4 \pm 5.7 (TA) ($p=0.34$). Baseline demographic, clinical and semen characteristics in both arms were comparable. Spontaneous pregnancy was achieved in 13.9% (CA) vs. 32.9% (TA), with odds ratio=3.04 (95% CI=1.33-6.95) and number needed to treat to benefit (NNT) =5.27 patients. In CA within-group analysis, none of semen parameters revealed significant changes from baseline: sperm density ($p=0.77$), progressive motility ($p=0.88$) and normal morphology ($p=0.77$). Conversely, in TA within-group analysis, mean of all semen parameters improved significantly in follow-up versus baseline ($p < 0.0001$). In between-group analysis, all semen parameters improved significantly in TA vs. CA ($p < 0.0001$). No AEs were reported.

Conclusions: Our RCT provided level-1b-evidence of superiority of varicocele repair over observation in infertile men with clinically palpable varicoceles and

impaired semen quality; with increased odds of spontaneous pregnancy and improvements of semen characteristics within one year of follow-up.

690 THE RELATIONSHIP BETWEEN VARICOCELE RECURRENCE AND BODY MASS INDEX

Gorur S., Candan Y., Helli A., Akcin S., Cekirge D., Kays Y.S., Cekic C., Kiper A.N.
Mustafa Kemal University Faculty of Medicine, Dept. of Urology, Hatay, Turkey

Introduction & Objectives: To investigate whether there is a relationship between body mass index and the varicocele recurrence in infertile patient population or not.

Materials & Methods: A total of 198 consecutive primary infertile male patients (138 patients with varicocele and 60 were not, named as control group) were included to this prospective study. A detailed medical and physical examination, including height and weight measurements and examination for the presence and grade of varicocele, were performed to all cases. BMI was calculated as the following formula: weight (kg) / height (m)². Patients with a BMI value of less than 25 kg/m² were categorized as normal, BMI value of 25 kg/m² to less than 30 kg/m² were overweight and BMI value more than 30 kg/m² were obese. All patients with varicocele were operated with subinguinal varicocelectomy technique and re-examined for operation related complications at least six months after the operations.

Results: Overall follow-up period was 9.2 ± 2.4 (range 6 to 16) months. There were no statistically significant difference between primary varicocele and control groups regarding to age and height ($p=0.143$ and $p=0.553$, respectively). However, primary varicocele group had significantly lower weight and BMI than the control group ($p < 0.001$ and $p < 0.001$, respectively). After the subinguinal varicocelectomy operation, varicocele recurrences were occurred in 22 (15.9%) patients. Weight and BMI of recurrent varicocele group were significantly lower than the non-recurrent and control groups ($p < 0.001$ and $p < 0.001$, respectively). While, 72.7% and 27.3% of the recurrent group patients were in BMI < 25 and BMI 25-30 categories, 50.0% and 44.8% of the non-recurrent and 25.0% and 60.0% of the control group patients were in these categories, respectively.

Conclusions: Prevalence of varicocele recurrence was significantly increased with decreasing BMI, especially in patient with lower BMI than 25 kg/m². It seems that, lower BMI than 25 kg/m² might be a predisposing factor on the varicocele recurrence.

691 LAPAROENDOSCOPIC SINGLE-SITE SURGERY VERSUS CONVENTIONAL LAPAROSCOPIC VARICOCELE LIGATION: A RANDOMIZED CLINICAL STUDY

Ha U.S.¹, Kim S.H.¹, Koh J.S.¹, Cho Y.H.¹, Lee S.W.², Moon H.S.³, Yu J.H.⁴, Han J.H.⁵

¹*The Catholic University of Korea College of Medicine, Dept. of Urology, Seoul, South Korea,* ²*Eulji Hospital, Eulji University School of Medicine, Dept. of Urology, Seoul, South Korea,* ³*Hanyang University College of Medicine, Dept. of Urology, Seoul, South Korea,* ⁴*Inje University College of Medicine, Dept. of Urology, Seoul, South Korea,* ⁵*Hanil General Hospital, Dept. of Urology, Seoul, South Korea*

Introduction & Objectives: Laparoendoscopic single-site surgery (LESS), an attempt to further enhance the cosmetic benefits of minimally invasive surgery while minimizing the potential morbidity and pain associated with multiple incisions, has been developed recently. Our aim is to compare the outcome between two different surgical techniques conventional transperitoneal laparoscopic varicocele ligation (CTL-VL) and laparoendoscopic single-site varicocele ligation (LESS-VL) in two patient cohorts.

Materials & Methods: The study included 82 patients with 92 clinically palpable varicoceles who underwent varicocelectomy. The patients were randomly allocated to one of two equal groups according to the varicocele ligation technique, which included CTL and LESS approach. Assessment included early postoperative complications, operative time, hospital stay and time to return to work. The visual analogue scale (VAS) that ranged from 1 to 10 and analgesia requirements during the postoperative course were used to evaluate postoperative pain. Mean preoperative semen parameters were compared with mean postoperative parameters at follow up. We defined improvement in semen parameters as a greater than 20% change in preoperative values.

Table. Operative and postoperative outcomes

	LESS-VL (n=39)	CTL-VL (n=43)	p-value
Operative time (min)	48.0 \pm 11.7	48.3 \pm 14.6	0.937
Hospital stay (day)	1.5 \pm 1.1	1.6 \pm 1.5	0.693
Time to return to normal activity	2.7 \pm 0.9	3.3 \pm 1.2	0.025
Pain on postoperative day 2	1.9 \pm 0.8	2.6 \pm 1.1	0.005
Pain on postoperative day 3	0.6 \pm 0.5	1.2 \pm 0.7	0.017
Total analgesia requirements (mg)	13.4 \pm 12.3	28.5 \pm 20.6	0.011
No. improved in semen parameters (%)			
Count	37 (94.9)	40 (93.0)	0.547**
Motility	34 (87.2)	37 (86.0)	0.880
Morphology	37 (94.9)	41 (95.3)	0.654**

Data were shown as mean value \pm SD (except semen parameters)

*: morphine sulfate equivalent

** : Fisher's Exact test

LESS-VL = laparoendoscopic single-site varicocele ligation; CTL-VL = conventional transperitoneal laparoscopic-varicocele ligation.

Results: All the procedures in the 2 groups were completed satisfactorily, with no