



patients were counselled regarding the impact of TT on spermatogenesis and encouraged to discontinue TT if possible. During VR, vasal and epididymal fluid (as indicated) was sampled and each aspirate underwent microscopic evaluation for sperm presence and quality and was categorized as: motile sperm/intact-non-motile sperm/sperm parts/no sperm. Rates of sperm presence/absence in the vasal/epididymal fluid, frequency of VV/VE, post-operative patency (presence of motile sperm) and semen parameters were compared among patients on TT vs. clinically-matched patients not using TT at the time of VR.

**RESULTS:** Among the 2622 VRs reviewed, 54 men (2%) reported using TT at the time of their VR. Despite its impact on spermatogenesis, intra-operative microscopic analysis of the reproductive fluid (vasal or epididymal) identified the presence of sperm in 95% (51/54) of patients. Testis biopsy confirmed sperm production among 3 patients with absence of sperm within the vasal or epididymal fluid. Rates of VV or VE, did not significantly differ among men using TT at the time of VR compared to nonusers. Post-operative patency rates (TT:78 % vs. No TT:94%) and mean total motile sperm counts (TMC) were lower among patients using TT at the time of VR (7.9 vs. 28.3,  $p=0.02$ ).

**CONCLUSIONS:** Use of TT at the time of VR does not appear to impact rates of intra-operative microscopic identification of sperm within the reproductive fluid or the indication for VV/VE. Post-operative patency rates and total motile sperm counts may be lowered by use of TT. Moreover, the determination to the etiology azoospermia post-operatively (production vs. obstruction) may be clouded by the use of TT during VR.

**Source of Funding:** None

### MP43-13

#### ENCLOMIPHENE IS ASSOCIATED WITH HIGHER PREGNANCY RATES WHEN COMPARED TO CLOMIPHENE IN INFERTILE MEN WITH LOW TESTOSTERONE

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**INTRODUCTION AND OBJECTIVE:** Clomiphene citrate has been used for decades for female infertility; however, it has also been used off-label for many years to treat infertile males with low testosterone. Enclomiphene citrate is the trans isomer of clomiphene citrate and is another off-label medication for the same at-risk population but with no estrogenic agonism. The purpose of this study is to evaluate and compare the pregnancy outcomes of couples seeking fertility who have been treated with either clomiphene or enclomiphene as well as quantitating effects on serum hormones.

**METHODS:** We studied patients with low testosterone and infertility who had been prescribed either clomiphene or enclomiphene at a university hospital within the observation range of 01/01/2021 - 08/01/2022. Dosage information as well as baseline serum hormone levels (LH, FSH, testosterone, estradiol) were captured into a patient database. T-tests were calculated in SPSS to compare means across the clomiphene and enclomiphene patient populations; a two-sample Z-test was used to compare pregnancy outcomes.

**RESULTS:** 110 patients taking clomiphene were compared to 114 patients taking enclomiphene, with the former demonstrating higher testosterone levels (886 ng/dL vs. 547 ng/dL), [ $t(222)=4.25$ ,  $p=.000031$ ]. Those taking enclomiphene had significantly higher levels of both LH (6.08 IU/L vs. 4.26 IU/L) and FSH (6.46 IU/L vs. 4.17 IU/L), [ $t(195)=2.36$ ,  $p=.019$  and  $t(195)=2.29$ ,  $p=.023$ , respectively]. Estradiol also demonstrated a difference between the groups: the mean for clomiphene patients was 35.34 pg/mL, whereas the mean for enclomiphene patients was 29.85 pg/mL [ $t(213)=2.00$ ,  $p=.047$ ]. Most importantly, enclomiphene patients demonstrated significantly higher rates of pregnancy compared to the clomiphene patients (52% vs. 34%,  $p=.046$ ).

**CONCLUSIONS:** The empirical treatment of unexplained male infertility has for many years utilized clomiphene citrate in patients with concurrent low testosterone. This study evaluates the use of the single

trans-isomer enclomiphene and demonstrates its association with better pregnancy outcomes when compared to clomiphene. Future studies should focus in the use of enclomiphene in a blinded prospective manner to better define its efficacy.

**Table One:** Comparison of Clomiphene and Enclomiphene Cohorts

	Clomiphene Group (n = 110)	Enclomiphene Group (n = 114)	T-Test	P Value
Testosterone	Mean 886	Mean 547	4.25	.000031
LH	4.26	6.08	2.36	.019
FSH	4.17	6.46	2.29	.023
Estradiol	35.34	29.85	2.00	.047
Pregnancy Rates	34%	52%		.046

**Source of Funding:** None

### MP43-14

#### THE IMPACT OF VARICOCELE EMBOLISATION ON SPERM DNA FRAGMENTATION & ASSISTED REPRODUCTIVE TECHNOLOGY (ART) OUTCOMES

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**INTRODUCTION AND OBJECTIVE:** A varicocele is a common and treatable cause of male infertility. Current guidelines advocate for treatment of varicoceles based on abnormal semen analysis rather than abnormal sperm DNA fragmentation (SDF). High SDF has been associated with poor pregnancy outcomes following ART. The aim of the study was to determine the outcomes of varicocele embolisation in an infertile male population on SDF and subsequent ART outcomes.

**METHODS:** A retrospective study of 130 consecutive male partners of infertile couples with a clinical varicocele between 2015 and 2022 were included. 119 of these men underwent varicocele embolisation by a team of 2 radiologists, whilst 11 declined. SDF was assessed by the alkaline Comet test pre-intervention and at least 3 months after. 84 treated and the 11 untreated men proceeded to ICSI. Baseline couple parameters such as age, and pregnancy and live birth rate outcomes in the ART cycle following this intervention between groups were analysed. T & chi-square tests were used on continuous and categorical data respectively (significance rate  $p<0.01$ ).

**RESULTS:** Varicocele embolisation significantly reduced the proportion of sperm with DNA damage across all three Comet parameters ( $p<0.01$ ) (Table 1). Only 18% of these men had normal semen analysis. Baseline parameters for men and women were similar with an average male age of 39 and female age of 37 for both groups. Couples who underwent embolisation had a significantly better pregnancy rate (65% vs 18%,  $p<0.01$ ) and higher live birth rate which did not reach significance due to low numbers (32% vs 9%,  $p=0.11$ ).

**CONCLUSIONS:** There was a significant reduction in SDF following varicocele embolisation in this population of men of couples with infertility, with a significant difference in pregnancy rate outcomes in the treated group. Repair of clinical varicoceles improves sperm DNA quality, and can optimize fertility treatment success, even in patient with normal semen analysis. Limitations of the study include small numbers in the 'untreated' arm and lack of randomisation, a future avenue for research.