INTRODUCTION AND OBJECTIVE: Microsurgical testicular sperm extraction (mTESE) is the gold standard for surgical sperm retrieval in men with nonobstructive azoospermia (NOA). Intraoperative table-top microscopic specimen analysis can be utilized to identify viable sperm for in-vitro fertilization, and also provides information regarding the necessity of bilateral testicular exploration and helps determine the end of the surgery. In this study, we investigated the impact of intraoperative microscopic analysis on mTESE sperm retrieval rates (SRR).

METHODS: A PubMed search was performed for studies on men with NOA undergoing mTESE with a primary outcome of SRR. Studies on obstructive azoospermia, Klinefelter’s syndrome cohorts, and review articles were excluded. Only the most recent publication from a given academic institution’s cohort was considered (Figure 1). Each study was categorized based on whether the manuscript described utilization of intraoperative microscopy to identify viable sperm. The number of patients who underwent mTESE, and the number of patients who had successful sperm retrieval, were recorded for each study and combined within groups. Differences in SRR between the groups was determined using Chi-square testing.

RESULTS: 182 articles were identified in our initial search, of which 36 were included in the final analysis. 20 studies were categorized as “(+ Intraoperative Microscopic Guidance”, and 7 studies were “(- Intraoperative Microscopic Guidance”. In the (+) group, a total of 3923 cases were included with a cumulative SRR of 51.0% (95% CI 49.4–52.5), and in the (-) group, a total of 877 cases were included with a cumulative SRR of 46.0% (95% CI 42.7–49.4). The estimated difference in SRR between the two groups was 4.94% [95% CI 1.28%–8.57%]. On chi-squared analysis, there was a statistically significant difference in SRR [X²=7.007; p = 0.0081].

CONCLUSIONS: In this proportional meta-analysis, we found a significantly higher SRR for men with NOA undergoing mTESE with intraoperative microscopic analysis. These findings support increased utilization of real time microscopic assessment of specimens to guide intraoperative decision-making and optimize outcomes while also possibly preventing unnecessary extensive exploration.
and per-transfer pregnancy rates were 66%, 76%, and 100% respectively. Amongst these couples, 6 underwent PGT-A, and 70.0% of tested blastocysts were euploid.

CONCLUSIONS: Utilization of mTESE with subsequent gradient technology may serve as a highly sensitive sperm detection and enrichment method for NOA patients in order to obtain superior ART outcomes.

Source of Funding: NA

MP43-03
CLOMIPHENE CITRATE IN IDIOPATHIC NON-OBSTRUCTIVE AZOOSPERMIA
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INTRODUCTION AND OBJECTIVE: Clomiphene citrate (CC) is a selective estrogen receptor modulator (SERM). Empirical off-label use of CC in men with infertility has existed for almost 50 years, yet there is not enough evidence to support its use in non-obstructive azoospermia (NOA) patients. This study aims to evaluate the efficacy of CC in sperm production in NOA, and determine the predictors for success.

METHODS: A prospective study was conducted on patients who presented with idiopathic NOA from 2015-2022. Patients were evaluated using Mann-Whitney U tests. ROC analysis was conducted to select the optimal cut-offs for predicting response. 60 patients met the inclusion criteria; 48 azoospermic patients (group A), 12 cryptospermic patients (group B). Response is defined as presence of any sperm in the ejaculate for (group A) and as sperm concentration >10000 sperm/ml for (group B).

RESULTS: 8/48 (16.6%) in group A had sperm in the ejaculate with CC (concentration mean 0.51 concentration 6 months of treatment. Future studies should focus on the success of CC in men with NOA. Patients were categorized into the following age-based groups: 20 s (20–30 years), n=64), 30 s (30–40 years), n=201), and >40 s (>40 years, n=58). We retrospectively recorded testicular volume, serum luteinizing hormone (LH), follicle-stimulating hormone (FSH), total testosterone (TT), and anti-Mullerian hormone (AMH) levels, and SRRs.

RESULTS: Testicular volumes in groups 20 s, 30 s, and >40 s were 9.5±4.3 vs. 9.1±4.0 vs. 7.9±3.9 mL, p<0.05 (Jonckheere-Terpstra trend test). Although we observed no intergroup differences in serum LH and TT levels, FSH levels significantly increased with age (22.4±13.3 vs. 26.9±13.2 vs. 26.8±15.3 mIU/mL, p<0.05) as did AMH levels (4.4±4.3 vs. 7.9±6.3 vs. 9.2±7.0 ng/mL, p<0.001). SRRs in the 20 s, 30 s, and 40 s groups were 12.5 vs. 28.4 vs. 36.2%, p<0.05 (Cochran-Armitage trend test).

CONCLUSIONS: We observed age-induced testicular atrophy and increased serum FSH and AMH levels, which highlight age-induced testicular function decline in men with NOA and suggest that NOA may be progressive despite favorable SRRs in older men.

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MP43-04
EFFECTS OF AGE ON TESTICULAR FUNCTION AND THE SPERM RETRIEVAL RATE IN MEN WITH NONOBSTRUCTIVE AZOOSPERMIA
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INTRODUCTION AND OBJECTIVE: We previously reported an increase in the age of men with nonobstructive azoospermia (NOA) (AUA Annual Meeting 2020). It is important to determine age-induced effects on testicular function in men with NOA. We investigated age-induced changes in testicular endocrine function and the sperm retrieval rate (SRR) during microdissection testicular sperm extraction in men with NOA.

METHODS: We investigated 323 men with idiopathic NOA. Patients were categorized into the following age-based groups: 20 s (20–30 years, n=64), 30 s (30–40 years, n=201), and >40 s (>40 years, n=58). We retrospectively recorded testicular volume, serum luteinizing hormone (LH), follicle-stimulating hormone (FSH), total testosterone (TT), and anti-Mullerian hormone (AMH) levels, and SRRs.

RESULTS: Testicular volumes in groups 20 s, 30 s, and >40 s were 9.5±4.3 vs. 9.1±4.0 vs. 7.9±3.9 mL, p<0.05 (Jonckheere-Terpstra trend test). Although we observed no intergroup differences in serum LH and TT levels, FSH levels significantly increased with age (22.4±13.3 vs. 26.9±13.2 vs. 26.8±15.3 mIU/mL, p<0.05) as did AMH levels (4.4±4.3 vs. 7.9±6.3 vs. 9.2±7.0 ng/mL, p<0.001). SRRs in the 20 s, 30 s, and 40 s groups were 12.5 vs. 28.4 vs. 36.2%, p<0.05 (Cochran-Armitage trend test).

CONCLUSIONS: We observed age-induced testicular atrophy and increased serum FSH and AMH levels, which highlight age-induced testicular function decline in men with NOA and suggest that NOA may be progressive despite favorable SRRs in older men.

Source of Funding: None

MP43-05
TESTICULAR SPERM ASPIRATION (TESA) VS. MICROFLUIDIC SPERM SEPARATION (MSS) IN COUPLES WITH HIGH SPERM DNA FRAGMENTATION UNDERGOING ICSI: WHICH APPROACH IS BETTER?
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INTRODUCTION AND OBJECTIVE: Testicular sperm aspiration (TESA) and microfluidic sperm separation (MSS) are modalities designed to select the best sperm quality for intra-cytoplasmic sperm injection (ICSI) in men with poor sperm DNA integrity. We sought to investigate and compare reproductive outcomes in couples with a high sperm DNA fragmentation index (DFI) using TESA-ICSI or MSS-ICSI.

METHODS: We conducted a retrospective study of consecutive infertile couples with high DFI who underwent ICSI using TESA, or MSS. Couples were divided into 3 subgroups based on sperm DFI re-...