117 Sperm retrieval in Klinefelter syndrome patients - first Hungarian data

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Introduction & Objectives: Klinefelter syndrome is the most common numerical sex chromosome abnormality and the most frequent genetic cause of azoospermia. KS prevalence of about 1-2 in 1000 males. The syndrome is characterized by small and firm testes with hyalinised seminiferous tubules, gynecomastia, elevated FSH and LH levels, and reduced testosterone. In about 90% of the cases, azoospermia is found. Microsurgical testicular sperm extraction (mTESE) combined with intracytoplasmic sperm injection (ICSI) represents a chance for azoospermic men with KS to father a child. Our epidemiological data of KS patients treated in our center have already been reported in Pilzen in Central European Meeting in 2017. With this report, we would like to present our results with microsurgical sperm retrieval (microTESE).

Materials & Methods: Clinical data of thirty-nine KS patients treated between 2009 and April 2018 in the Semmelweis University's Andrology Center were processed. Following a WHO V. semen analysis patient's age, most relevant endocrine parameters (FSH, LH, and Testosterone) and scrotal ultrasound (US) findings were analyzed. Surgical sperm retrieval was performed by the same surgeon using microdissection technique. Samples were checked on site and cryopreserved.

Results: A total of 39 KS patients clinical data were processed. The average age of the patients was 32.2 (± 7.5) years. In 37 patients (95%) non-obstructive azoospermia, while in 2 cases (5%) severe oligo-astheno-teratozoospermia was found.
15/37 (40%) azoospermic patients underwent the recommended microdissection TESE operation.
The mean age of the patients underwent microTESE was 31.4 years, mean right and left testis volume was similar, 3.7 ml. Mean FSH and LH levels were elevated, 31.2 IU/l. and 15.4 IU/l., respectively, with a subnormal mean total testosterone level (6.6 nmol/l). Microlithiasis could be detected in 6 cases (40%).
Sperm retrieval rate (SRR) was found 20% (3/15 patients).

Conclusions:
According to the published data, the sperm retrieval rate is approximately 50% in KS patients. A much lower (9%) SRR was reported by Rohayem et al. in 2015 in adolescent population when LH exceeded 17.5 IU/l and total testosterone was found below 7.5 nmol/l. In our adult patient series, LH and total testosterone were found 15.4 IU/l and 6.6 nmol/l, respectively, which can be an explanation of our results.
Multicenter, international trials would be necessary to evaluate SRR data in KS patients in more European countries.