

the Charlson Comorbidity Index (CCI). According to EAU recommendations, patients were segregated as younger (group 1) and older >40 years (group 2). Serum hormones, serum PSA and semen parameters were investigated in every man. Descriptive statistics and logistic regression models tested potential associations with PSA levels.

Results: Patient's age and BMI were comparable between fertile and infertile group. Median (IQR) age, BMI and total PSA were 38 (35, 43) years, 25.0 (23.3, 26.9) kg/m² and 0.7 (0.5, 1.1) ng/mL in the whole cohort, respectively. Median PSA (0.7 vs. 0.6 ng/ml, $p = 0.03$), CCI (0.8 vs. 0.1, $p = 0.03$) and FSH (6.0 vs. 4.0 mIU/ml, $p < 0.001$) values were higher and total testosterone (4.4 vs. 4.9 ng/ml, $p = 0.003$) was lower in infertile than fertile group. Overall, a PSA value >1 ng/mL was found in 318 (30.1%) men. A higher rate of PSA >1 ng/ml was found in infertile than fertile men (32.0% vs. 20.0%, $p = 0.01$). Among infertile men, sperm concentration (19.5 vs. 28.3 mil/ml, $p = 0.008$) was lower in patients with PSA >1 ng/mL than those with PSA <1 ng/mL. Among fertile patients, no differences were observed according to PSA levels. Of all, 176 (27.0%) group 1 patients had PSA >1 ng/mL. More group 1 infertile men than fertile controls had PSA >1 ng/ml (28.0% vs. 17.0%, $p = 0.03$). At MVA logistic regression analysis infertility status (OR 1.7, $p = 0.04$) was the only independent predictor for serum PSA >1 ng/mL in group 1, after accounting for testosterone level.

Conclusions: This case-control analysis showed that infertile men have higher PSA values than age-matched fertile controls. Of all, almost one out of three infertile men younger than 40 years have a first total PSA value greater than 1 ng/mL.

SC27

The relationship between isolated teratozoospermia, sperm DNA fragmentation and inflammatory biomarkers: Findings from a cross-sectional study

L. Candela, L. Boeri, P. Capogrosso, W. Cazzaniga, E. Ventimiglia, E. Pozzi, F. Belladelli, M. Alfano, F. Pederzoli, C. Abate, E. Montanari, F. Montorsi, A. Salonia (Milano)

Introduction: According to 2010 WHO reference values for human semen characteristics, teratozoospermia is defined when spermatozoa with morphologically normal forms are <4%. Isolated teratozoospermia (iTERATO) is frequently associated with infertility, fertilization success at ART and increased markers of sperm damage (i.e., sperm DNA fragmentation index (SDF) or reactive oxygen species). We aimed to assess the prevalence of and the clinical and hormonal characteristics of men with iTERATO seeking first medical help for primary couple's infertility.

Materials and methods: Data from 1857 primary infertile men (median (IQR) age 37 (21–41) years) were analyzed. Health-significant comorbidities were scored with the Charlson Comorbidity Index (CCI). Semen analysis, serum hormones and SDF (with SDF $\geq 30\%$ at SCSA = pathologic) were investigated in every patient. A complete blood count was requested for every man and the neutrophil-to-lymphocyte ratio (NLR), platelet-to-lymphocyte ratio (PLR), and the monocyte-to-eosinophil ratio (MER) were calculated. Data from a cohort of 103 age-matched fertile men was also collected. Descriptive statistics tested the association between clinical and hormonal characteristics in patients with iTERATO, and either isolated oligozoospermia (iOLIGO) or asthenozoospermia (iASTHENO).

Results: Of 1857 patients, 223 (12%), 83 (4.5%) and 258 (13.9%) had semen parameters suggestive for iTERATO, iOLIGO and iASTHENO, respectively. Of 103 fertile men, iTERATO was found in 37 (35.9%) cases. Patient's age, BMI and CCI were comparable between groups. iOLIGO patients reported both higher median FSH (7.8 vs. 4.3 vs. 4.5 mIU/mL; $p = 0.001$), LH (4.6 vs. 3.4 vs. 3.9 mIU/mL; $p = 0.001$), but lower Inhb levels (106.4 vs. 167.1 vs. 153.4 pg/mL; $p = 0.001$) compared to iTERATO and iASTHENO, respectively. Total testosterone and SHBG were similar

among groups. Higher median SDF values (37.5 vs. 19.8 vs. 26.4%; $p = 0.001$) and higher rates of pathologic SDF (44.0% vs. 20.5% vs. 34.0%; $p = 0.04$) were more frequently observed in iTERATO than in both other groups. Median C-reactive protein (0.9 vs. 0.3 vs. 0.4 mg/L), NLR (2.1 vs. 1.6 vs. 1.8) and PLR (120.2 vs. 109.5 vs. 115.1) values were higher in patients with iTERATO than iOLIGO and iASTHENO, respectively. At Spearman's correlation, sperm morphology was inversely associated with SDF ($\rho = -0.25$; $p = 0.001$) and NLR ($\rho = -0.14$; $p = 0.02$). In the fertile cohort, NLR, PLR and MER were comparable between iTERATO vs. non iTERATO individuals.

Conclusions: One out of ten men seeking medical help for primary couple's infertility reported semen parameters suggestive for iTERATO. iTERATO is even more prevalent in fertile men. Infertile patients with iTERATO had increased levels of SDF and inflammatory serum markers compared to those with iOLIGO and iASTHENO. Our findings suggest a significant link between sperm morphology and oxidative balance in infertile men.

SC28

Treatment of erectile dysfunction using a nutraceutical mix. Preliminary data in a randomized, single-blind, placebo-controlled study

N. Stanojevic, V. Pesic, J. Alonso Lopez, A. Ruffo (Belgrade)

Introduction: Approximately 50% of men aged 40–70 years report suffering from some degree of erectile dysfunction (ED). PDE5-i is the first line treatment for this condition. Many patients search for a different treatment, with less side effects. Use of food supplements is common and more patients are seeking for alternative treatment for ED. This study investigated the efficacy of a new supplement to improve male sexual function.

Materials and methods: In this randomized, single-blind, placebo-controlled study, 92 men with mild to moderate ED were enrolled. The mean age was 56.4 ± 15.9 years. Group A (56 pts) received the active treatment containing a mix of L-citrulline 2500 mg, Moringa oleifera 1500 mg, Tribulus terrestris 400 mg (45% saponins), Panax ginseng 400 mg, Lepidium Meyenii 200 mg, Trigonella Foenum-Graecum 200 mg, Zinc 15 mcg, Vitamin D3 7.5 mcg, Vitamin B6 1 mg. This treatment was administered twice a day for two months. Group B (36 pts) received a placebo. Patients were investigated by using the International Index of Erectile Function (IIEF-5) questionnaire, the Sexual Encounter Profile (SEP) diaries, SEP Question 2: "Were you able to insert your penis into your partner's vagina?" and SEP Question 3: "Did your erection last long enough for you to have successful intercourse?" In addition, patients underwent further evaluation with the Global Assessment Question (GAQ) by answering the two yes/no questions of the test: (GAQ-Q1) "Over the past four weeks has the treatment you have been taking improved your erectile function?" and (GAQ-Q2) "If yes, has the treatment improved your ability to engage in sexual activity over the past four weeks?"

Results: At one month follow-up 10 pts drop-outs (11%): consisting of 6 pts from Group A and 4 pts from Group B. 4 pts (8%) reported mild gastrointestinal symptoms. 6 pts (12%) reported mild insomnia. Group A showed a statistically significant improvement of the IIEF mean scores compare to the control group, from a baseline total score of 14.7 ± 4.0 to 20.2 ± 3.4 Vs 15.6 ± 3.4 to 17.2 ± 2.6 . 42 pts (84%) answered 'yes' to SEP Q2 vs 30 pts (60%) pre-treatment. SEP Q3 was answered positively by 36 pts (72%) vs 27 pts (54%). For the GAQ questions, 30 pts (60%) answered "Yes" to the GAQ-Q1 while 29 pts (58%) answered "Yes" to the GAQ-Q2. When reviewing the change in SEP scores, a significant increase was noticeable between the baseline and follow-up data.

Conclusions: The combination of these composite improves male sexual function.