

day were included in group A (17 patients); patients who did not meet these criteria were included in group B (17 patients). Main age of patients  $29 \pm 8.3$  years. The volume of sperm fluids was  $3.4 (\pm 1.3)$  in group A but in group B was  $3.3 (\pm 1.9)$  ( $p > 0.05$ ). The total sperm count in group A was  $29.1 (\pm 21.4)$  million while in group B it was  $48.2 (\pm 31.1)$  million ( $p < 0.02$ ). Sperm count in group A was  $12.5 (\pm 8.0)$  million/ml<sup>-1</sup> while in group B was  $22.5 (\pm 19.9)$  million/ml<sup>-1</sup> ( $p < 0.04$ ). The progressive motility (a+b) was in group A was  $31.5\% (\pm 15.4)$  while in group B was  $35.2\% (\pm 19.3)$  ( $p > 0.05$ ). Furthermore, the percentage of morphologically normal spermatozoa in group A was  $3.2\% (\pm 1.9)$  while in group B there was a percentage of morphologically normal spermatozoa of  $8\% (\pm 4.5)$  ( $p < 0.0001$ ).

**Conclusions:** It may be concluded, with the necessary precautions given the limitations of our study, that the use of the laptop and especially the non-thermal effects resulting from it can lead to a decrease in spermatozoa concentration and a change in the spermatozoa morphology. New controlled studies will be needed to investigate these issues of great interest today.

### SC8 Diagnosis of Peyronie's disease and Shear Wave Elastosonography of the penis: New non-invasive method

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**Introduction:** The main objective of the study is to identify a possible relationship between penile rigidity and pain in erection and subsequent appearance of plaques typical of La Peyronie's disease. To this end, the use of Shear Wave Elastosonography of corpora cavernosum in clinical practice, was evaluated in order to demonstrate the presence of penile fibrosis (expressed at tissue level as stiffness) typical of the early stages of La Peyronie's disease in patients with pain in erection, and thus to undertake specific therapy.

**Materials and methods:** This was a prospective study. The following subjects were excluded from the study: diabetes, previous pelvic surgery, patients who had taken PDE5i less than three months ago, or who had previously been treated for La Peyronie's disease. The inclusion criteria were subjects with erectile pain, subjects with palpable or visible plaque on B Mode ultrasound. All patients underwent Elastosonography shear wave of the corpora cavernosa, filling in the VAS questionnaire regarding pain and ultrasound B - Mode.

**Results:** 85 patients were recruited within less than six months of the first visit. The results obtained reveal that the baseline VAS score correlates positively with the rigidity of the corpora cavernosa expressed in kPa (according to Young's module) obtained by Elastosonography shear wave ( $p < 0.05$ ). There was no statistically significant correlation ( $p = 0.09$ ) between the presence of hyperecogenic plaques on B-mode ultrasound and the VAS score. At 6 months, there was a statistically significant increase in the rigidity of both corpora cavernosa respect to baseline ( $p < 0.05$ ) with a significant decrease in the VAS score with respect to baseline ( $p < 0.04$ ). In addition, there was a positive correlation between patients with a score  $> 28$  kPa (expressed as an average of both corpora cavernosa) and the appearance of hyperecogenic plaques on ultrasound B - mode ( $p < 0.03$ ).

**Conclusions:** Shear wave Elastosonography of corpora cavernosa can be used in daily clinical practice to make an early and non-invasive diagnosis of La Peyronie's disease in order to undertake therapies aimed at decreasing the painful symptomatology since its onset, and to slow down the evolution of the disease.

### SC9 Impact of extracorporeal shock wave therapy for erectile dysfunction and Peyronie's disease on hormonal and reproductive testicular function: Results from a randomized controlled trial

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**Introduction:** Extracorporeal shock wave therapy (ESWT) is an emerging treatment for erectile dysfunction (ED) and Peyronie's disease (PD). Concerns on safety of ESWT on testicular function raised from animal studies. To date, there is no data available regarding the effects of ESWT on human fertility and testosterone production. The aim of the present study is to evaluate the hormonal and reproductive testicular function in patients undergoing ESWT for ED or PD.

**Materials and methods:** We designed a randomized controlled trial (RCT) in which consecutive patients with ED or PD were enrolled. Men aged between 18 and 40, with normozoospermia and vasculogenic ED or acute phase of PD were included. Patients with infections or cancers in the treatment area, male accessory glands infections (MAGI), and non-suspend able anticoagulant therapy or coagulation disorders were excluded. Computer-based randomization (1:1) was used to assign subjects to group A (ESWT) or group B (no treatment). ESWT was performed with DUOLITH SD1 T-TOP (Storz Medical AG, Tägerwil, Switzerland) by a trained urologist. Two session per week for 3 weeks was performed in ED patients, while one session per week for 4 weeks was performed in PD patients. Each session included 3000 shock waves ( $0.10-0.25$  mJ/mm<sup>2</sup>, 4–6 Hz). Semen analysis and total serum testosterone concentration were assessed before and 3 months after ESWT in the group A. In the group B the same evaluations were performed at baseline and after 3 months. The reading and interpretation of the seminal exams was performed by an expert semiologist according to the WHO criteria (5th edition - 2010). All adverse events (AE) were recorded during the study period.

**Results:** A total of 60 patients were enrolled in the study (30 group A, 30 group B). No significant difference was found at baseline in seminal parameters and testosterone levels between the two groups. In the group A no significant difference in seminal volume, total sperm count, sperm concentration, total and progressive motility, and morphology was found ( $p > 0.05$ ) after treatment, while a significant reduction in seminal pH ( $8.3 \pm 0.2$  vs.  $8.0 \pm 0.1$ ;  $p < 0.001$ ) was observed after. No significant difference in testosterone levels was recorded ( $p = 0.584$ ) in the group A after ESWT. In the group B no significant difference in the semen parameters and in testosterone levels was detected ( $p > 0.05$ ). No severe complication (Clavien-Dindo III-V) occurred.

**Conclusions:** ESWT in ED and PD patients does not seem affect hormonal and reproductive testicular function. Further RCTs with larger sample size and longer follow-up are needed to confirm our results.

### SC10 miR-20a-5p expression as a potential non-invasive diagnostic biomarker in patients with non-obstructive azoospermia

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**Introduction:** Recently, alterations in the expression of specific microRNAs in semen have been linked to altered spermatogenesis suggesting their expression could be used as potential infertility