**Introduction:** Prostatitis-like symptoms (PLS) are common, often vague and not specific symptoms which may originate from the prostate or from other pelvic or scrotal organs.

- The National Institutes of Health-Chronic Prostatitis Symptom Index (NIH-CPSI) is nowadays considered the gold-standard instrument to assess PLS severity.
- So far, imaging of the prostate-vesicular region has been considered an "optional", poorly useful, tool in evaluating PLS.
- Although several studies previously investigated the impact of prostatitis, uresis or epididymitis on semen parameters, the correlations between their related symptoms and scrotal/transrectal ultrasound characteristics have been poorly studied.
- No previous study systematically evaluated ultrasound correlates of PLS in men with couple infertility.

**Aim:** To investigate possible correlations between the NIH-CPSI total score and scrotal/transrectal colour-Doppler ultrasound (CDU) features and to evaluate the differences between subjects with and without PLS in a cohort of men with couple infertility.

**Methods:** PLS of 400 men (35.8±7.2 years) with couple infertility were assessed by the NIH-CPSI.

Prostatitis-like symptoms were defined by the presence of perineal and/or ejaculatory pain or discomfort and an NIH-CPSI pain score ≥ 4, according to Nickel's criteria (Nickel et al., J Urol., 2001;165:842-5).

Symptoms were classified as “mild” or “moderate to severe” for an index pain score of 4 to 7 or ≥ 8, respectively.

All patients underwent, during the same day, seminal analysis, including interleukin 8 (sIL-8), a reliable surrogate marker of prostatitis, and urine and seminal cultures, along with scrotal and transrectal CDU, before and after ejaculation.

**Results**

PLS were detected in 39 (9.8%) subjects, 17 (4.3 %) with "mild" and 22 (5.5 %) with "moderate to severe" symptoms.

After adjusting for age, a positive association between NIH-CPSI total and current positive urine and/or seminal cultures (Fig.1) and sIL-8 levels (Fig.2) was observed.

After adjusting for age, waist and total testosterone (TT), no association among NIH-CPSI (total or subdomain) scores or PLS and sperm parameters was observed.

* p for trend 0.01
** p for trend 0.001
*** p for trend 0.0001

In addition, subjects with a higher NIH-CPSI total score more often had CDU features suggestive of inflammation of the prostate (including inhomogeneity, Fig. 3; hypoechoegenicity, Fig. 4; hyperaemia, Fig. 5 and a higher arterial prostatic peak systolic velocity, APPSV, Fig. 6), of the seminal vesicles and of the epididymis.

When subjects with PLS were compared to the rest of the sample, they more often had a positive history of genito-urinary diseases, current positive urine and/or seminal cultures and higher sIL-8 levels, along with prostate-vesicular and epididymal abnormalities.

As assessed by receiver operating characteristic (ROC) curve, at 10.4 cm/sec APPSV discriminates subjects with PLS with a specificity of 82% and sensitivity of 78%, and an accuracy of 85.3±2.7 % (p=0.0001) (Fig. 7).

When only subjects with PLS (n=39) were investigated, those with moderate to severe symptoms had a higher prevalence of current positive urine and/or seminal cultures (50% vs 0%, p<0.001).

The aforementioned significant associations of PLS were further confirmed by comparing PLS patients with age-, waist- and TT-matched PLS-free patients (1 : 3 ratio).

**Conclusions:**

- NIH-CPSI total score is positively associated with positive urino and/or seminal cultures, higher sIL-8 levels, along with prostate-vesicular and epididymal abnormalities suggestive of inflammation.
- APPSV was a parameter suggestive of prostate inflammation, and propose a 10.4 cm/sec cut-off to predict PLS. Symptoms severity is mainly related to the presence of current positive cultures.