

# **Extracorporeal shock wave therapy (ESWT) in treatment of chronic pelvic pain syndrome (CPPS): Vascular endothelial growth factor (VEGF) levels in peripheral blood during therapy**

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## **Introduction**

CPPS (NIH-NIDDK 3B) provokes pain at various locations, effective treatment is hardly known. ESWT has a potential to induce both pain relief and neoangiogenesis. We performed ESWT in CPPS patients and investigated serum VEGF levels.

## **Patients and methods**

Patients with CPPS (infection/prostate cancer excluded) were treated with 6 ESWT sessions (each 2000 impulses) within 2 weeks (perineal approach, supine position, Minilith SL1, Storz Medical AG, Kreuzlingen, Switzerland). Prostate region was focused by integrated inline ultrasound. Pain/CPPS complaints were evaluated by statistically validated questionnaires. Investigative serum parameters including VEGF were obtained immediately before/after each ESWT and at follow up (FU).

## **Results**

126 ESWT treatments of 21 patients (age 36-62 years, mean 49.7) were performed without complications/anaesthesia. 40 peripheral VEGF samples (Elisa R&D) from 10 patients were investigated (before, after ESWT 3/6, FU1 one week after ESWT). 50% (n = 5) showed VEGF levels continuously within normal range. 30% (n = 3) had a preexisting VEGF elevation yet before ESWT (elevation 6.0%, 20.6% and 69.4%), 20% showed mixed levels. At ESWT 3/6/FU1 VEGF-levels increased in 60% (n = 6)/30% (n = 3)/20% (n = 2) in relation to initial value. Mean VEGF increase after ESWT 3/6/FU1 was 52.5% (0.3 – 202.2%), 14.6% (3.2 – 35.6%) and 13.3% (0.8/25.8%).

## **Discussion**

In spite of increased systemic VEGF levels during ESWT in a majority of patients the potential local neoangiogenetic effect showed no clear correlation with systemic VEGF levels. Evaluation will continue in a larger patient group (systemic) and an animal model (local VEGF levels).