2-LBS-23 Late-Breaking Session

Bladder sensation evaluation of a carrageenan-induced chronic prostatitis model using a direct measurement of the bladder mechanosensitive single-unit afferent nerve activity

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Aims: Chronic prostatitis/chronic pelvic pain syndrome (CP/CPPS) causes chronic pain and/or storage symptoms. This study aimed to evaluate whether bladder sensation is deteriorated in a carrageenan induced CP/CPPS model by a direct measurement of the bladder mechanosensitive single-unit afferent nerve activity.

Methods: Male adult Sprague-Dawley rats were used. Fifty μL of 3% λ-carrageenan was injected into both lobes of the ventral prostate and for the control rats, fifty μL of saline was used. Seven days after injection, histology was examined along with cystometry and mechanosensitive single-unit afferent nerve activity. Statistical significance was determined using an unpaired Student's t-test with a two-sided significance level of 0.05.

Results: In the carrageenan group, weight increase and inflammatory cell infiltrations in the prostate were confirmed, basal and threshold-pressures of the bladder were remarkably increased, when compared to the sham group. Regarding Aδ- or C-fibers, the mechanosensitive afferent nerve activities revealed no differences in either group.

Conclusions: The carrageenan-induced CP/CPPS rat model showed edema and inflammation in the prostate, whereas little change was detected in bladder sensation. These findings, which were evaluated using a direct measurement of the mechanosensitive single-unit afferent nerve activity, suggest that the bladder sensation is unlikely deteriorated in this model.