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EFFECT OF UBIQUITINATION INHIBITION ON PROSTATE INFLAMMASOME ACTIVATION

Hypothesis / aims of study
Inflammasome activation had been demonstrated in certain type of non-bacterial prostatitis. Potential factors that regulate inflammasome include NF-kappa B and IkB. Since IkB degradation is mediated by ubiquitin, inhibiting this process may affect inflammasome activation

Study design, materials and methods
We set up non-bacterial prostatitis model on male rats with Carrageenan injection. Ubiquitin isopeptidases inhibitor was induced into prostate as initial treatment. Von Frey filament was used to evaluate scrotal and tail base tenderness threshold. Cystometrogram was performed to evaluate bladder intercontraction interval and intravesical pressure. Prostate cell line was used to confirm findings in animal model.

Results
Hypersensitivity of scrotal base in CP rats may be reversed along with shortened intercontraction interval when treated with ubiquitin isopeptidases inhibitor. There was mild decrease in prostate interleukin 1-beta expression after prostatitis treated by ubiquitin isopeptidases inhibitor, which is compatible with cell line experiments. However, this is not found in prostatitis rats treated with ubiquitin E1 Inhibitor or IkK kinase inhibitor. Significant decrease was noted in phosphorylated-NF-kB expression of CP treatment group, which may be the key in inflammasome inhibition.

Interpretation of results
Modulating ubiquitinization within prostate may affect inflammasome activation in non-bacterial prostatitis. The effect of systemic modulation may be further investigated.

Concluding message
Protein degradation may play a role in pathophysiology of chronic pelvic pain syndrome.

References
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Disclosures
Funding: CMRPG6D0063 & CMRPG6C0312 & CMRPG6F0261 **Clinical Trial:** No **Subjects:** ANIMAL **Species:** SD RAT **Ethics Committee:** The Institutional Animal Care and Use Committee of Chang Gung Memorial Hospital approved all of the procedures, which complied with the NIH Guide for Care and Use of Laboratory Animals