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Abstract No. 185 Efficacy and Safety of Oral Pharmacologic Treatments for Chronic Prostatitis/Chronic Pelvic Pain Syndrome: A Systematic Review and Network Meta-analysis

Theme: Non-communicable diseases

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Purpose / Background:

Chronic prostatitis/chronic pelvic pain syndrome (CP/CPPS) refers to the presence of bothersome pelvic pain symptoms, without an identifiable cause. It affects 10–16% of men of all ages worldwide, thereby being one of the most common urological diseases among men. Although it appears that there are many treatment options for CP/CPPS, the efficacy of these treatments remains questionable. Limited by the methodology of traditional pairwise meta-analysis, the findings of previous studies were augmented by quantitative analyses only if head-to-head data were available. **Network meta-analysis (NMA)** is a statistical technique that allows both direct and indirect comparisons to be undertaken, even when two of the treatments have not been compared directly. We conducted this NMA to **examine whether pharmacologic treatments are more effective than placebo and whether there are differences between drugs regarding the efficacy and safety for CP/CPPS**.

Methods:

PubMed, Embase, Cochrane Central Register of Controlled Trials, and Web of Science were searched from inception to June 8, 2020. Randomized controlled trials comparing two or more oral pharmacological treatments for patients with CP/CPPS were included. Primary outcomes were efficacy (the National Institutes of Health Chronic Prostatitis Symptom Index [NIH-CPSI] total score, pain score, urinary score, and quality of life score [QoL]) and safety (adverse events). More detailed information could be access to a previous registered **study protocol** (PROSPERO **CRD42020184106**).

To determine the **consistency** of the NMA, we adopted the design-by-treatment interaction model with random inconsistency effects. To minimize the issues arising from the potential lack of **similarity** and **transitivity**, only oral pharmacological treatments with strict patient allocation were included. Moreover, the outcome data were transferred into change-from-baseline values to avoid significant differences at baseline. The similarity was assessed based on clinical characteristics, including sample size, age, and treatment duration.

We used non-informative priors with vague normal (mean 0, variance 10,000) and uniform (0–1) prior distributions for parameters such as the means and standard deviations. Various levels of prior distribution were applied in the sensitivity analyses. First, 50,000 simulations were performed, and then we generated an additional 10,000 simulations with three sets of different initial values and sheared the first 20,000 simulations as the burn-in period in our model. Based on 40,000 simulations and thin = 40, the point estimate adopted the median of the posterior distribution.

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Results & Conclusions:

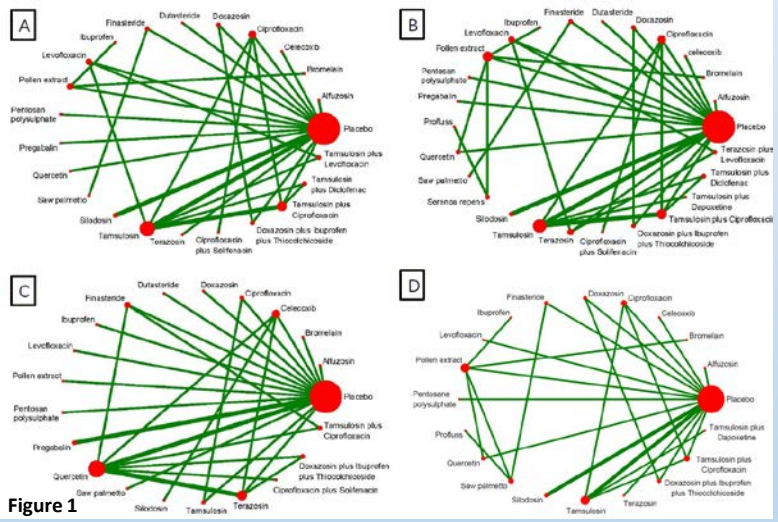

Figure 1

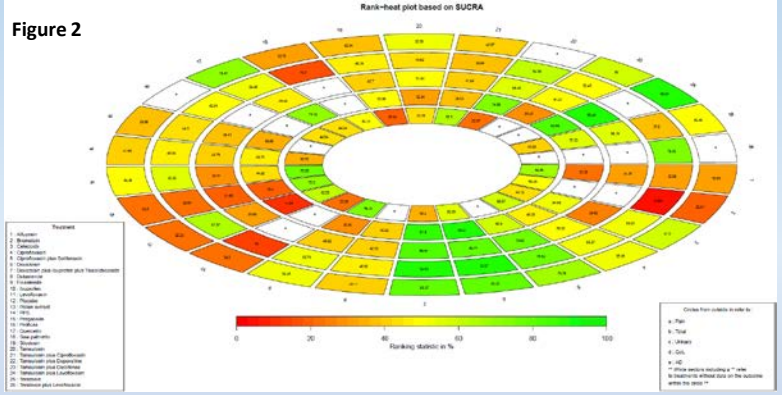

Figure 2

Twenty-five studies (3514 patients) assessed 26 treatments (**Figure 1. network plots**). Low to very low quality evidence indicated that doxazosin (Mean difference [MD], -11.4, 95% Credible interval [CrI], -17.5 to -5.1) and the doxazosin, ibuprofen, and thiocolchicoside combination (MD, -11.6, CrI, -18.1 to -5.3) were significantly more effective than placebo in the NIH-CPSI total score (**Figure 2**. **Ranking heatmap based on SUCRA**). Other NIH-CPSI relative outcomes (pain, urinary, and QoL scores) showed a similar pattern. Low- and very-low-quality evidence suggested that combination treatment including doxazosin, ibuprofen, and thiocolchicoside combination (odds ratios [OR], 3.2, CrI, 0.5 to 19.3) and the tamsulosin and dapoxetine combination (OR, 6.0, CrI, 0.7 to 67.3) caused more adverse events. However, results are mainly based on indirect comparisons.

Pharmacologic treatments have little evidence supporting efficacy in CP/CPPS. Future studies could personalize therapy for individuals according to specific symptoms and identify nonpharmacologic targets for CP/CPPS.