EFFICACY OF *LACTOBACILLUS REUTERI* STRAINS DSM 16666 AND DSM 17938 FOR TREATMENT OF URINARY TRACT INFECTIONS IN PREMENOPAUSAL WOMEN: A PROOF-OF-CONCEPT RCT

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Problem Statement. Urinary tract infections (UTIs) are the most common bacterial infection in women, with approximately 50% of women experiencing at least one UTI in their lifetime. Probiotics have been considered to be an alternative to antibiotic use. The aim of this Proof of Concept was to assess the effectiveness of *Lactobacillus reuteri* strains DSM 16666 and DSM 17938 in combination with cranberry PAC (proanthocyanidins) and zinc for the treatment of acute non-complicated urinary tract infections in premenopausal women.

Methods. Premenopausal women with acute non-complicated UTI and attending an ambulatory center were enrolled in this randomized, double-blind, placebo-controlled trial. Subjects received orally $2*10^8$ CFU of *Lactobacillus reuteri* strain DSM 16666 and *Lactobacillus reuteri* strain DSM 17938 in combination with cranberry PAC and zinc (n=22) or placebo (n=24) two times daily for 12 days, after which they were followed up for 18 days without treatment.

Results. At the end of treatment, the clinical cure was significantly better in the group who received the product with probiotics, PAC and zinc. The percentage of women with negative to mild severity of symptoms was 91% in the active group vs. 54% in the placebo group ($p<0.05$) (Fig. 1).
Additionally, the number of women with moderate number of urinary leukocytes was better in the group receiving probiotics, PAC and Zn compared with the control group, (31% vs 4 %). The frequency of adverse events was similar in both groups.

Conclusions. This study supports the use of *Lactobacillus reuteri* strains DSM 16666 and DSM 17938 in combination with PAC and zinc as an effective and safe therapeutic alternative for the treatment of uncomplicated UTI in premenopausal women.

Trial registration. ClinicalTrials.gov ID: NCT03019172
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Fig. 1. Severity of symptoms during treatment