



## HP-48: Probiotics and Multi-Drug Resistant Urinary Tract Infection

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**Subject description:** Probiotics are beneficial microorganisms that can have a positive impact on gut health and potentially influence various aspects of the body's immune and inflammatory responses. Multi-drug resistant urinary tract infections (MDR-UTIs) are a concerning health issue, as they are more challenging to treat due to the limited effectiveness of antibiotics. Probiotics have been studied for their potential role in preventing and managing UTIs, including MDR-UTIs, although the research in this area is still evolving

**Objectives:** This study was performed to determine the prevalence of uropathogens causing urinary tract infections (UTIs), their pattern of antimicrobial resistance and evaluating the recurrence of urinary tract infections after taking probiotics

**Methods:** This research was conducted in Oran and involved the examination of 182 urine specimens, of patients suffering from recurrent urinary tract infections, obtained from a private laboratory. Fully automated VITEK 2 compact system was used in the identification and antimicrobial susceptibility testing of causative microorganisms. To assess the recurrence of these infections, 91 patients took oral probiotics for one month, and the others did not.

**Results and discussion:** Antimicrobial resistance was seen both in Gram-positive and Gram-negative bacteria. Multiple resistances were high among the isolated urinary pathogens. Particularly, *E. coli*, *Enterobacter cloacae* and *Staphylococcus aureus*, which had very high resistance rate to the tested antimicrobial agents. The recurrence of urinary tract infections in patients who took probiotics in addition to antibiotics decreased by 40%, unlike those who only took antibiotics.

**Conclusion:** Although prophylactic antibiotics remain the preferred preventive treatment in recurrent UTIs, the emergence of antimicrobial resistance worldwide has made the development of non-antibiotics strategies a priority. The idea is that probiotics may help maintain a balanced and healthy urinary tract microbiota, making it less susceptible to infection.

**Keywords:** urinary tract infection, antibiotic resistance, multi-drug resistance, microbiota, probiotics.