

D-Mannose Alone vs Other Agents in Prevention of Urinary Tract Infections in Women. A Systematic Review and Meta-Analysis

Authors : Ahmed Al-Hajjaj, Alaa A-Maatoq

Abstract : Introduction Urinary tract infections (UTIs) are most common bacterial infection in women. Recurrent urinary tract infections (rUTI) are defined by the occurrence of at least two episodes of UTI in six months or three in 12 months. Low dose prophylactic antibiotics were used for rUTI prevention. However, this is associated with increased risk of adverse effects and bacterial resistance. Therefore, exploring non-antibiotic prophylaxis is necessary. One of these is D-Mannose which is natural monosaccharide. The proposed mechanism of action of D-Mannose is inhibition of bacterial adhesion to the urothelium. The available data about its effectiveness is conflicting. Methods the systematically searched the literature for studies using D-mannose alone in prevention of rUTI in females aging 18 years or above in comparison to antibiotics, placebo or control. Results Systematic search revealed total of five eligible studies. Three studies were randomized trials (RCTs). There was one prospective study and one retrospective cohort study. Two out of three RCTs were open label trials which concluded D-Mannose effectiveness however both have poor quality of evidence. Both prospective and retrospective studies included demonstrated effectiveness of D Mannose, however both have small sample size (total 45 and 27 patients). The highest quality and largest RCT (total 598 patients) compared D-Mannose to placebo concluded there is no difference between D-Mannose and placebo in rUTI prevention. Meta-analysis of three studies revealed no statistical difference in rUTI prevention between D Mannose and placebo/control Conclusion There is currently no solid evidence to support the effectiveness of D-Mannose in prevention of recurrent urinary tract infections.

Keywords : d-mannose, urinary tract infection, recurrent cystitis, antibiotics prophylaxis

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