

Effectiveness of Cranberry Ingesting for Prevention of Urinary Tract Infection: A Systematic Review and Meta-Analysis of Randomized Controlled Trials

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Abstract : Background: Urinary tract infection is the most common bacterial infection to our best knowledge. Objective: This study is to investigate whether cranberry ingesting could improve the urinary tract infection. Methods: We searched the PubMed and Cochrane Library for relevant randomized controlled trials without language limitations between 9 March 1994 and June 30, 2017, with a priori defined inclusion and exclusion criteria. The search terms included (cranberry OR Vaccinium macrocarpon OR Vaccinium oxy-coccus OR Vaccinium microcarpum OR Vaccinium erythrocarpum OR Vaccinium) AND (urinary tract infection OR bacteriuria OR pyuria) AND (effect OR effective-ness OR efficacy) AND (random OR randomized). Results: There were 26 studies met the selection criteria included among 4709 eligible participants. We analyzed all trials in meta-analysis. The random-effects pooled risk ratio (RR) for the group using cranberry versus using placebo was 0.75; 95%CI[0.63, 0.880]; p-value=0.0002) and heterogeneity was 56%. Furthermore, we divided the subjects into different subgroup to analysis. Ingesting cranberry seemed to be more effective in some subgroups, including the patients with recurrent UTI (RR, 0.71; 95%CI[0.54,0.93]; p-value=0.002) ($I^2=65\%$) and female population (RR, 0.73, 95%CI[0.58,0.92]; p-value=0.002) ($I^2=59\%$). The prevention effect was not different between cranberry and trimethoprim (RR, 1.25, 95%CI[0.67, 2.33]; p-value=0.49) ($I^2=68\%$). No matter the forms of cranberry were capsules or juice, the efficacy was useful. Conclusions: It is showed that cranberry ingesting is usefully associated with prevention UTI. There are more effective in prevention of UTI in some groups.

Keywords : cranberry, effectiveness, prevention, urinary tract infect

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