

Efficacy of cranberry (*Vaccinium macrocarpon*) powder (PACran™) against recurrent urinary tract infection due to *E. coli*

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Urinary tract infection (UTI) represents a recurrent serious health problem especially for women, affecting more than 10 million people every year. Cranberries (*Vaccinium macrocarpon*) have long been used by humans as a preventive measure for urinary tract infections and maintenance of gastrointestinal health. Although the effectiveness is limited, cranberry juice is widely used to prevent urinary tract infections (UTIs). We evaluated the efficacy of cranberry powder [PACran™] in a 90-day double-blind, untreated group controlled clinical trial in 57 women volunteers from 18 to 40 years of age, with or without the symptoms of UTI. The volunteers were randomly selected and grouped into three groups including a untreated control group (n=13). The present study includes two treatment groups; a low dose (500 mg daily, n= 21) and a high dose (1000mg daily, n= 23). Hematological and serum biochemical parameters were evaluated at the beginning of the study (day 0) and on day 10, 30, 60 and 90 during the course of the study. Occurrence of UTI during the course of the study was confirmed by the presence of *E. coli* in the culture of urine samples. The statistical analysis used was ANOVA. At the end of the 90-day treatment period, no significant changes were observed in the hematological and serum biochemical parameters in any of the groups. At the end of the study, there was no significant change in the presence of *E. coli* in the untreated control group (p= 0.7709), when compared to day 0. Whereas, presence of *E. coli* was reduced at a highly significant level (p<0.0001) and at a moderately significant (p<0.05) level in the high dose and low dose treated group, respectively. In summary, a daily oral dose of 1000 mg of PACran™ has minimum or insignificant effects on the hematological parameters and biochemical parameters in serum and urine, whereas, it has significant potential to reduce recurrent *E. coli* UTIs. Therefore, it can be advocated in the prevention or treatment of urinary tract infections.