

# Translational Research Urology

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Editorial

## Cornus Mas and Urinary Tract Infections Treatment

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### HIGHLIGHTS

- Cornus mas should come to medicine and UTI treatment after solving the problematic issues of stone-forming and interaction with warfarin.
- The recent trends in herbal medicine open the new insight to cranberry as the miraculous anti-infection and anti-cancer substance.
- Cornus mas has shown anti-infection property in UTI especially for the complete treatment of urinary tract recurrent infection.

### ABSTRACT

Urinary tract infections (UTI) are somehow complicated to treat and patients frequently will have the problem of infection recurrence after complete cure. Usually, the UTI treatment is done by antibiotics but the problem of bacterium resistance and sensitivity should be always kept in mind. The recent trends in herbal medicine open new insight to cranberry (Cornus mas) as the promising anti-infection and anti-cancer substance. It has shown anti-infection property in UTI especially for the complete treatment of urinary tract recurrent infection. However, it can increase the risk of kidney stones and have interaction with warfarin.

**Keywords:** Urinary Tract Infections; Herbal Medicine; Cornus Mas

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**Editorial:** A urinary tract infection (UTI) starts when bacteria enter the urinary tract, bladder, and kidneys. Antibiotics are usual medications to treat a UTI and to stop symptoms like pain, burning, and an urgent need to pee. The choice of antibiotic depends on two facts: what kind of bacteria caused the infection and how severe the UTI is (1). The urine culture test will define the type of germs which caused the infection. Several antibiotics are the candidate of UTIs treatment like amoxicillin, ceftriaxone, cephalexin, ciprofloxacin, fosfomycin, levofloxacin, nitrofurantoin, and trimethoprim (2,3). Very recently the importance of herbal medicine is being reconsidered in UTIs and the cornus mas juice

is recommended for both UTI and cancer treatment. Cranberries (*Vaccinium macrocarpon*) are full of bioactive ingredients reported with an effect on the different of health benefits, ranging from the enhanced immune system and reduced contagions to decrease cardiovascular disorders and tumor inhibition (4). A study by Jensen indicated the antimicrobial impact of cornus mas extract (5). Medication with a flavonoid-rich fraction of cornus mas results in tumor stop in U87, HT-29, and DU145 (6). A randomized trial by Foxman et al., indicated that between women who have gynecological operation connecting urinary catheterization, medication by cornus mas through the postoperative time condensed the degree of

UTI to 50%. The antibacterial result of cornus mas over infection (bacterial by *Escherichia coli*) was considered in the new mouse model of UTI. Condensed microbial amounts were shown in the bladder. Quinic, malic, shikimic, and citric acid, the preponderant organic acids in cornus mas, were experienced in both methods of mixture and single. The groupings of the organic acids, and the acids directed individually, had not changed the infection in the UTI model except cornus mas. Actually, the antibacterial outcome of the organic acids from cornus mas on cystitis can be gained from controlling a combination of malic acid and either citric or quinic acid. The research by Jensen and his colleagues for the first time indicated to the cornus mas juice reduce *E. coli* colonization of the bladder in an investigational mouse model of UTI suggested that the organic acids can be the most active mediators (7). A randomized clinical trial by Amsa and his colleagues in 2018 standardized more amount versus small amount cornus mas proanthocyanidin extracts for the prevention of recurrent women's cystitis (8). An ideal dose of cornus mas measured and uniformed in premature atrial contraction (PAC) ( $2 \times 18.5$  mg PACs/day) or a controlled dose ( $2 \times 1$  mg PACs/day). The main consequence for the trial is the mean number of new symptomatic UTIs in women over a six months follow-up during the intervention (9). Despite the noteworthy benefit of cornus mas, it should keep in mind that because of high oxalate content cornus mas can predispose to kidney stone formation and also its interaction with coumarins may cause bleeding (10,11).

### Conclusions

Cornus mas should be included in UTI treatment armamentarium eligibility after solving the problematic issues of stone-forming and interaction with warfarin.

### Authors' contributions

All authors had an equal contribution.

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### Conflict of interest

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### Ethical statement

Not Applicable.

### Data availability

Not Applicable.

### Abbreviations

PAC Premature atrial contraction

UTI Urinary tract infections

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