TITLE: Study Trial for reduction in recurrent UTIs in long term care patients using daily high concentration cranberry extract 36mg proanthocyanidin capsules. A Case-Study.

KEYWORDS: UTI, Long term care, cranberry extract, 36mg proanthocyanidin, antibiotics, UTI Prevention

SUMMARY

This was a 3 month pre/post observational study to evaluate the efficacy of a natural cranberry extract with high proanthocyanidin (PAC) concentration to reduce urinary tract infection(UTI) rates for residents at the East Cumberland Lodge long term care facility in Pugwash, Nova Scotia. Working with the Director of Patient Care and the resident Family Doctor, 10 patients with the highest rate of urinary tract infections in the preceding 3 months were selected to receive 1 Utiva capsule per day for a 3 month period. The number of culture-confirmed UTIs during this period were compared to the previous 3 months. There was a 67% reduction in the number of patients who experienced a UTI while receiving Utiva. There was a three-fold reduction in the total number of UTIs (21 UTIs total prior and 7 UTIs total while on Utiva). 1 patient was excluded from the study due to inability to follow study protocol. They were treated with antibiotics prior to culture result on the direction of a specialist physician. Of the remaining 9 patients, 6 patients experienced no UTIs while receiving Utiva including 2 patients who successfully had prophylactic antibiotics discontinued. In conclusion, Utiva given once daily reduced UTI rates very effectively in long-term care patients with high prior rates of UTIs.

INTRODUCTION

Recurrent urinary tract infections are a very common challenge for healthcare practitioners and patients all around the world. The prevalence of UTIs is estimated as 60% of women experience a UTI at least once in their life, of which 40% will have recurrent UTIs. This can be very costly to healthcare systems and can have severe implications to the quality of life for patients. The likelihood of having UTIs significantly increases in both men and women after age 65, but more so for the latter due to post-menopause hormonal changes. Other factors such as diabetes, mobility challenges, surgery and catheter use also contribute to the likelihood of developing UTIs. Antibiotics have been the primary option for evidence-based treatment and prevention of UTIs provided by urological guidelines. It is alarming that 25-50% of antibiotic resistance includes those commonly prescribed for UTIs (WHO). Many individuals in long term care facilities or retirement residences are more prone to UTIs and unfortunately start experiencing resistances to antibiotics putting them in a vicious cycle of recurring UTIs. UTI symptoms can present in many ways in older adults including confusion or behavioural changes confounding early identification and treatment in this vulnerable population and making antibiotic stewardship very challenging.

In 2019, the Urology associations of Canada and the US included cranberry as having enough evidence as a non-antibiotic prophylaxis. The amount and concentration of the bioactive agent from cranberry,

Proanthocyanidins (PACs) is important. Most cranberry supplements or juice products have minimal amounts of PACs. Utiva is a natural cranberry extract in a capsule which has 36mg PACs.

This case-study was conducted at East Cumberland Lodge, a Level 2 long term care facility in Pugwash, Nova Scotia. The trial was initiated by Dr Donald Rowe, Medical Director at East Cumberland Lodge to help reduce the recurrence of UTIs among his most complex patients. UTIs were identified only after standard culture testing which guided antibiotic selection and prior patient history. In the pursuit of a safe and effective non-antibiotic prophylactic option to reduce UTI recurrences for his resident patients a recent positive experience with a community based patient using Utiva lead to this larger trial.

The introduction of Utiva was a collaboration between Dr Don Rowe(resident physician) and Wesley Trenholm(Director of Patient Care) at East Cumberland Lodge to investigate the efficacy of Utiva in chronic recurrent UTIs.

METHOD & RESULTS

They identified 10 of their complex recurrent UTI patients (>3 occurrences in 12 months) for this trial. All patients at the facility are Level 2 residents (require mobility assistance) and of these 10, some had altered renal function, indwelling catheters or on prophylactic antibiotics. Prior to starting the case study, the identified 10 recurrent UTI patients had their daily medications and supplements modified to include 1 Uitva capsule providing 36mg of proanthocyanidins. It was provided at the same time every day. 3 patients were previously on prophylactic antibiotics which was stopped and replaced with Utiva. A history of UTI episodes in the past 90 days was recorded prior to starting Utiva.

Throughout the course of the case study, patients were routinely followed up by nurses and Dr Rowe with no special care provided. If a UTI was identified, the patient was administered an antibiotic by the doctor as treatment for that acute episode while still continuing with the daily Utiva capsule. At 45 days after starting and at the 90 day mark, the patients were interviewed and their medical records were checked to verify any UTI episodes and the admintration of any antibiotics.

One participant was excluded from the study due to breach of study protocol. They were treated with antibiotics at symptom onset on the direction of a specialist physician on three occasions during the study period. Therefore, they did not have culture confirmed UTI prior to treatment. They are included in the data table for completeness but excluded from analyses. (Table 1)

There was a 67% reduction in the number of patients who experienced a UTI while receiving Utiva (9 prior and 3 post). There was a five-fold reduction in the total number of UTIs (20 UTIs total prior and 4 UTIs total while on Utiva). 6 of the 9 patients had no UTIs while on Utiva daily.

2 patients with indwelling catheters had a 83% reduction in UTIs(6 UTIs prior and 1 UTI while taking Utiva).

RESIDENT	Pre-UTIVA # of UTIs 90 days starting Sept 9, 2019	UTIVA # of UTIs 1st 45 days (Starting Dec 9, 2019)	UTIVA # of UTIs 2nd 45 days (Starting Jan 23, 2020)	# CHANGE	% CHANGE
A	2	1	1	0	0%
B*	2	0	0	-2	-100%
C*^	1	1	2	2	200%
D	1	0	0	-1	-100%
F	3	1	0	-2	-67%
G	2	0	0	-2	-100%
H	3	0	0	-3	-100%
I*	1	0	0	-1	-100%
J** (Indwelling Urinary Catheter)	2	1	0	-1	-50%
K*** (Indwelling Urinary Catheter)	4	0	0	-4	-100%
TOTAL	**21**	**4**	**3**	**-14**	**-67%**
TOTAL (no "C")	**20**	**3**	**1**	**-16**	**-80%**

* Resident normally on preventative abx but stopped for Utiva

** Resident J still on preventativ abx

*** Had replaced Resident E

^ Resident C very compromised and given abx for any UTI symptoms

CONCLUSION

There was a significant reduction(67%) in urinary tract infection rates in complex older adults living in a long-term care home with prior recurrent UTIs with daily administration of a high proanthocyanidin cranberry extract capsule (Utiva). Patients who benefited included 2 on prophylactic antibiotics which were successfully discontinued and two patients with chronic indwelling catheters. These results build support for a larger scale study to further investigate the impact a high proanthocyanidin cranberry extract capsule (Utiva) can have in long term care and its efficacy against other prophylactic options.

ACKNOWLEDGEMENTS

East Cumberland Lodge, Wesley Trenholm and Dr Donald Rowe all provided their resources and time to monitor and record patient history and checkups throughout the case study.

Szio+ Inc is the manufacturer of Utiva UTI Control Supplements and provided the capsules at a discounted price to the patients for the trial.