

ARE CRANBERRY-CAPSULES EFFECTIVE AND SAFE IN PREVENTING URINARY TRACT INFECTIONS IN KIDNEY TRANSPLANTED WOMEN? A RANDOMIZED CLINICAL TRIAL.

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BACKGROUND AND OBJECTIVES

- Kidney transplant (KT) receptors are predisposed to urinary tract infections (UTI).
- As antibiotic use select multidrug resistant agents efforts should be made to test prophylactic agents which are not antibiotics.
- Female patients are particular prone to this problem. UTI can lead to a higher risk of graft dysfunction and loss, hospitalizations, healthcare costs and mortality.
- Cranberry products have been used for UTI prophylaxis in general population, as a consequence of its anti-bacterial adherence capacity and favorable safety profile.
- Few data are available about cranberry effect in KT recipients.

DESIGN, SETTING, PARTICIPANTS AND MEASUREMENTS

- Double blind randomized trial, comparing the efficacy and safety of daily administration of cranberry-capsule versus similar placebo-capsule in the prevention of UTI in female kidney recipients
- Both cranberry and placebo capsules had 200mg of vitamin C and were administered for 6 months

Inclusion criteria

- Women,
- Age ≥18
- KT ≥1 year
- Estimated glomerular filtrate rate ≥ 30 mL/min/1.72 m²;

Exclusion criteria

- Pregnancy,
- Urological anomaly,
- Cranberry intolerance
- Ongoing antibiotic or cotrimoxazol prophylaxis

Primary endpoint

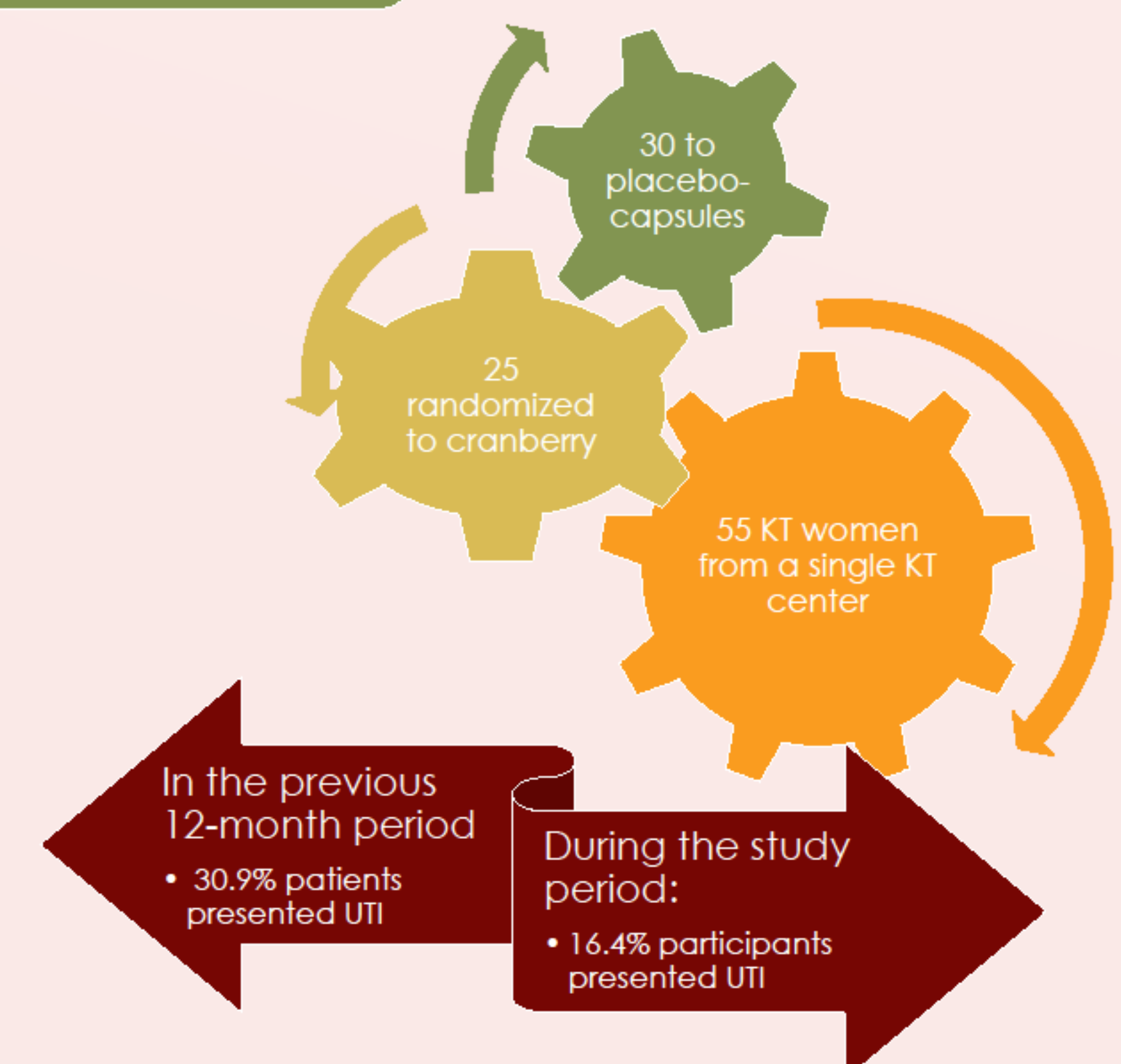
- UTI occurrence

Secondary endpoints

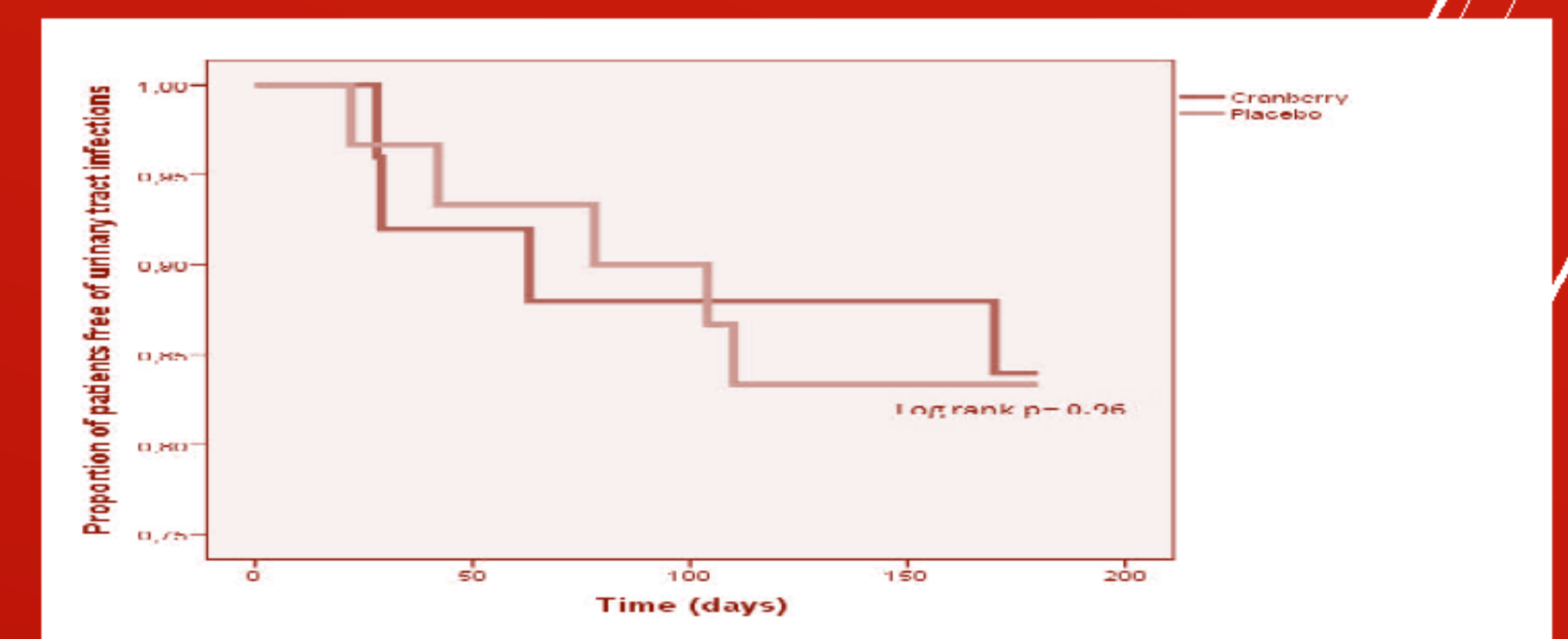
- Whilst time to first UTI,
- Need for hospitalization,
- Antibiotic resistance profile
- Graft function evolution
- Immunosuppressive dose revising

RESULTS

- No differences in
 - Age,
 - Race,
 - Diabetes mellitus,
 - KT duration,
 - Induction and maintenance regimens
 - Graft function
- There were no differences comparing cranberry and placebo-capsules groups
 - In time until first UTI,
 - Antibiotic resistances
 - Graft function,
 - Immunosuppressive dose changes requirement
 - Side effects



	Cranberry-capsule group	Placebo-capsule group	P value
Number of infections / number of affected patients	4 / 4	6 / 5	0.95
Isolated microorganisms			
Escherichia coli (number/%)	4 (100%)	4 (66.6%)	
Klebsiella pneumoniae (number/%)	0	1 (16.7%)	
Proteus mirabilis (number/%)	0	1 (16.7%)	
Antibiotic resistances identified per patient			
Amoxicilin-clavulanate resistance (number/%)	2 (50%)	1 (20%)	0.34
Quinolones resistance (number/%)	3 (75%)	2 (40%)	0.29
Sulfamethoxazole-trimetoprim resistance (number/%)	3 (75%)	3 (60%)	0.64
ESBL strain (number/%)	1 (25%)	0	0.24
Hospitalizations cause of UTI			
Number of hospitalized patients	1 (4%)	2 (6.7%)	0.67



Few options are available for UTI prophylaxis in KT patients.

Likewise few plant-derived products are tested in a double blind randomized clinical trial with special attention to side effect profile and interference in immunosuppression

This study did not unveil therapeutic benefit, but the sample was small, the follow up short and ascorbic acid in both capsules could have inhibited bacterial growth.

As the preparation was quite safe we believe that a larger and longer trial is needed to access the efficacy of this product. Furthermore, we enrolled low risk patients, excluding patients under prophylaxis with co-trimoxazol or nitrofurantoin, who still develop infections. In the future these patients should also be included as mechanisms of protection may be complementary. Finally, a higher dose may be considered

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