



***Nasturtium officinale* AND URINARY TRACT INFECTION: A RANDOMIZED,
DOUBLE-BLIND AND CONTROLLED CLINICAL TRIAL**

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INTRODUCTION

Nasturtium officinale R. Br (Brassicaceae) is a perennial dicotyledonous herb, known as watercress (Voutsina et al., 2016). It is rich in chemical compounds. PEITC (Phenylethyl Isothiocyanate), one of the most important compound from Brassicaceae family, which might exhibit antimicrobial activity. However, people with spinal cord injury are susceptible to several secondary problems, such as pressure ulcers and urinary tract infections (Winnick et al., 2004). Therefore, the bacteria *Escherichia coli* (*E. coli*), is the most frequently isolated species in urinary tract infection (Mutters et al., 2018). The aim of this study was to evaluate the urinary infection of people with spinal cord injury after 35 days of *Nasturtium officinale* extract, and compare the leukocytes in the urine before and after the supplementation.

MATERIAL AND METHODS

This is a randomized, double blind and controlled clinical trial. The local ethics committee UFPR approved the research with number 2.294.303. Twenty people with spinal cord injury were invited to participate to this study from Physical Disability Association of Parana (ADFP). The inclusion criteria were age over 17 years old and be diagnosed with spinal cord injury, and exclusion criteria was medical therapy for urinary tract infection. After exclusion and inclusion criteria, 18 people completed the informed consent form and urine samples were collected on day 1st and 36th. After that, they were divided into 2 groups: supplemented group with standardized extract of *Nasturtium*

officinale and placebo control group. These individuals were instructed to take 750 mg/kg/d of the extract or 750 mg/kg/d of placebo, for 35 days. Statistic: Using GraphPad Prism Software, significance was considered at a p-value < 0.05. The results were shown as mean \pm S.E.M. In both groups, were analyzed using one-way analysis of variance (ANOVA) with Tukey's multiple comparison test and/or Kruskal-Wallis test.

RESULTS/ DISCUSSION

The results of the leukocytes in the urine with nitrite were in the placebo control group on day 1, (0.666 \pm 0.088), and day 36 (1.000 \pm 0.408), *Nasturtium officinale* group, on day 1 (2.222 \pm 0.032) and day 36 (1.556 \pm 0.444). The bacteria found in the leukocytes was *E. coli*. Our data did not demonstrate any substantial change statistically, in the urine samples for both groups.

CONCLUSIONS

Although, (Mutters et al., 2018), showed potent antibacterial activity against isolates of *E. coli in vitro*, using PEITC. Our study, in contrast, demonstrated that the quantity of the *E. coli* of the people with spinal cord injury in their urinary tract did not change after 35 days, with *Nasturtium officinale* extract. Further studies might be necessary to investigate longer period with this extract in individuals with urinary tract disease.

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