

URODYNAMIC EFFECT OF CHRONIC ADMINISTRATION OF ASSOCIATION OF TAMSULOSIN AND TADALAFIL ON LOWER URINARY TRACT OF RATS.

Hypothesis / aims of study

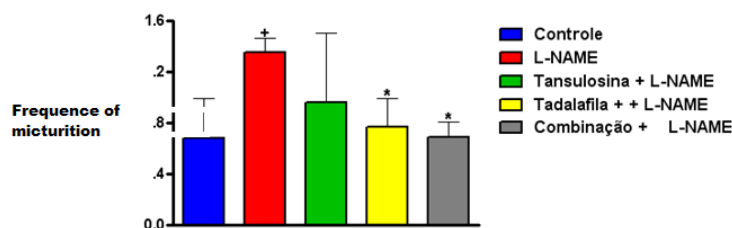
Recently, it has been observed an association between benign prostatic hyperplasia (BPH) and erectile dysfunction (ED). It was reported that patients with ED treated with phosphodiesterase type 5 (PDE5) inhibitors improves erection and lower urinary tract symptoms (LUTS). The pathophysiology of LUTS is not completely known, so it is necessary that clinical and experimental studies are made to clarify the mechanisms involved in its origin. However, despite the knowledge that there is improvement in LUTS, it is not known whether PDE5 works during storage, emptying, or both. It is not yet known if the association PDE5 with alpha blocker is better than its use alone or whether this association is safe. The aim of this study was to evaluate the effect of the combination of tamsulosin with tadalafil on lower urinary tract of rats by urodynamic study.

Study design, materials and methods

The animals were divided into five groups. Group 1 had six rats which were the control group; Group 2 had six rats treated by 30 days with L-Nitro-Arginine Methyl Ester (L- NAME) 60 mg/Kg/day dissolved in water; Group 3 had six rats treated with L- NAME (60 mg/Kg/day) and tamsulosin (1mg/kg/day) by 30 days; Group 4 had seven rats treated with L- NAME (60 mg/Kg/day) and tadalafil (5mg/kg/day) by 30 days; Group 5 had six rats treated with L- NAME (60 mg/Kg/day), tadalafil (5mg/kg/day) and tamsulosin (1mg/kg/day) by 30 days. At the end of treatment period, the animals underwent to urodynamic study. The urodynamic variables analyzed in the filling phase were non-void contractions (NVC), volume threshold (VT), threshold pressure (TP) and in the voiding phase were peak pressure (PP), frequency of micturition (FM), basal pressure (BP) and residual volume.

Results

It was observed that the animals in Group 2 has a significant increase in the NVC ($p < 0.05$), FM cycles ($p < 0.05$) and residual volume ($p < 0.01$) when compared to Group 1. Animals in group 3 have a significant reduction of NVC when compared to Group 2. The Group 4 animals has significant reduction in FM cycles ($p < 0.05$) and residual volume ($p < 0.05$) compared to group 2. Animals in group 5 has a significant reduction in NVC ($p < 0.05$), FM cycles ($p < 0.05$) and residual volume ($p < 0.01$) compared to group 2. (Figure 1)



ANOVA: $F=4,1330$; $P=0,0101$
 $+P < 0,05$ versus Controle; $*P < 0,05$ versus L-NAME (Teste de Tukey)

Interpretation of results

L-NAME cause detrusor overactivity. Tamsulosin and tadalafil relax the detrusor muscle decreasing detrusor overactivity. However the association of tamsulosin/tadalafil is superior to isolated administration reducing non-voiding contractions, the frequency of micturition cycles and residual volume.

Concluding message

The combination of tadalafil and tamsulosin was superior to the isolated administration of tamsulosin or tadalafil to cause detrusor relaxation.

Disclosures

Funding: FUNCAP - Fundacao Cearense de Apoio a Pesquisa CNPq - Conselho Nacional de Desenvolvimento Cientifico e Tecnológico **Clinical Trial:** No **Subjects:** ANIMAL **Species:** Winstar rats **Ethics Committee:** Animal ethical committee of UNIFAC