Abstract #455

Safety and Efficacy of Trospium Chloride and Solifenacin in Stroke-induced Neurogenic Lower Urinary Tract Dysfunction

Hypothesis

The complexities of stroke-related complications are diverse. After experiencing a stroke, the neural pathways responsible for urination can be compromised. Lower urinary tract symptoms are highly prevalent, affecting up to 94% of stroke patients. Treatment for neurogenic lower urinary tract dysfunction (NLUTD) focuses on safeguarding the upper urinary tract from harm while preserving urinary continence. The effectiveness of various oral or intravesical medications in managing detrusor overactivity and enhancing bladder compliance in NLUTD has been examined. Oral antimuscarinic agents have been a cornerstone of pharmacotherapy for addressing symptoms of overactive bladder in NLUTD for many years. NLUTD is a complex condition with significant challenges in urology. Our study seeks to assess the effectiveness of a 4-week treatment with Solifenacin and Trospium chloride on NLUTD, as well as their safety and impact on the quality of life of patients with stroke.

Study Design

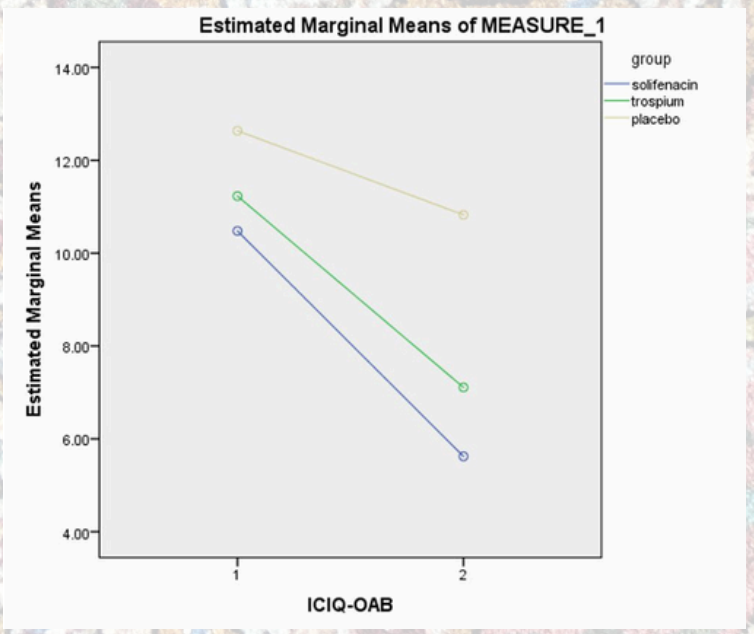
This study, conducted on 206 stroke patients, was a triple-blind, multi-center, randomized controlled trial that received approval from the Ethical Committee and was registered on IRCT (IRCT20160606028304N2). Patient recruitment took place at two locations: the Stroke Registry Center of Imam Reza Hospital at Tabriz University of Medical Sciences and the Rehabilitation Center of Athens-Greece Hospital. In terms of participants and design, individuals aged 18 and above who had experienced a stroke with a clinical diagnosis according to the World Health Organization (1989), confirmed by computed tomography or magnetic resonance imaging, assessed by a neurologist, and demonstrated normal cognitive function (MMSE > 25) were eligible to participate. Eligible participants also had to exhibit lower urinary tract symptoms (LUTS) based on the ICIQ-OAB or NBSS questionnaire. Exclusion criteria included evidence of brainstem involvement or bilateral symptoms, psychiatric disorders, history of LUTS surgery, pelvic or trauma surgery, severe neurological diseases, prostate cancer, inability to participate in the study, abnormal liver function, severe constipation, glaucoma, and allergies to anticholinergic agents. Participants were randomly assigned to receive oral Solifenacin, Trospium chloride, or a placebo.

Results:

The research commenced in July 2021 and concluded follow-up assessments by December 2022. Within this randomized controlled trial, 206 patients were randomly assigned to three groups: 69 in the Solifenacin group, 74 in the Trospium chloride group, and 63 in the placebo group. All participants were successfully followed up and completed the trial. The majority of participants were male, with an average age of 67.3, mostly with ischemic stroke. There were no significant differences in urinary symptom progression post-stroke among the groups. Symptoms improved in all groups based on the NBSS questionnaire post-treatment compared to baseline ($P<0.05$). Scores for ICIQ-OAB, ICIQ LUTS-QOL, and bothersome symptoms significantly decreased post-treatment compared to baseline ($P<0.001$). Both Trospium chloride and Solifenacin were effective in alleviating symptoms compared to placebo based on NBSS and ICIQ scores. Solifenacin showed superiority over Trospium chloride in certain aspects and had fewer side effects.

Interpretation of Results

The urinary and intestinal microbiota may play a role in UCPPS, including IC/BPS and CP/CPPS. Nevertheless, due to the significant discrepancies among existing studies, further prospective trials are necessary to validate these observations.



Conclusion

Solifenacin and Trospium chloride are effective treatments for OAB in stroke patients with NLUTD, with Solifenacin being recommended due to its superior therapeutic response and lower side effect profile

References

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