Pathophysiology of Idiopathic Overactive Bladder and the Success of Treatment: A Systematic Review from ICI-RS 2013

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Neurourol Urodyn 2014; 33: 611-617.

AIMS: To investigate the frequency of phenotype profiling of patients with idiopathic overactive bladder (OAB) syndrome, and to determine the effectiveness of treatment among individuals with different pathophysiologic profiles.

METHODS: The electronic databases MEDLINE, EMBASE, Cochrane CENTRAL, Cochrane Database of Systematic Reviews, and CINAHL were searched from January 1, 1980 to August 12, 2013 for interventional randomized controlled treatment trials (RCTs) of idiopathic OAB. Phenotyping for pathophysiology originating in the urothelial/mucosal layer of the bladder, the detrusor muscle cell layer, and the central nervous system were sought. Articles that analyzed urgency outcomes based on pathophysiologic profiling were selected. Due to the heterogeneity of the included interventions and outcome assessment measures, meta-analysis was not appropriate and a qualitative synthesis was undertaken.

RESULTS: Of 239 original RCTs of idiopathic OAB, 48 (20%) profiled participants on underlying pathophysiology. Less than half of these (\(n = 20\)) reported treatment efficacy for urgency symptoms by pathophysiologic sub-type. One examined the effect of botulinum A toxin on interstitial cell protein expression. Four compared treatment efficacy in OAB patients with and without involuntary detrusor contractions. Fifteen compared the effect of treatment on urgency reduction in patients with detrusor overactivity. There were no consistent trends in treatment efficacy according to pathophysiologic sub-type. No studies examined urothelial dysfunction or abnormal central processing of bladder afferent signaling in response to treatment.

CONCLUSIONS: In order to advance the field of idiopathic OAB, more trials are needed that profile and test urgency outcomes in participants according to suspected underlying pathophysiology.