

013

COST UTILITY ANALYSIS OF BOTOX VS. ANTICHOLINERGIC MEDICATION FOR URINARY INCONTINENCE, DUE TO NEUROGENIC DETRUSOR OVERACTIVITY ASSOCIATED WITH SPINAL CORD INJURY OR MULTIPLE SCLEROSIS

A Tang,¹ R Goeree,² G Blackhouse,² B Tsoi². ¹*School of Pharmacy, University of Waterloo;* ²*Department of Clinical Epidemiology and Biostatistics, McMaster University*

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Introduction Urinary incontinence (UI) negatively impacts quality of life, potentially contributing to depression, urinary tract infection, and renal impairment. Early treatment includes behavioural modification and anticholinergics. Among the general population, ~40% of patients with overactive bladder do not improve with such treatment. Diapers, pads, and intermittent catheterization may also be used. When earlier options fail, surgery is considered. Botox was approved by Health Canada for UI due to neurogenic detrusor overactivity (NDO), resulting from neurogenic bladder associated with multiple sclerosis or subcervical spinal cord injury in adults who had an inadequate response to or are intolerant of anticholinergic medications.

Botox is a sterile form of botulinum neurotoxin type A, derived from the anaerobic bacterium *Clostridium botulinum*. It is believed to prevent muscle contractions by temporarily blocking nerve impulses to the bladder muscle.

Objective To evaluate whether the benefit in urinary incontinence patients with neurogenic detrusor overactivity treated with Botox provides good value for Ontario public funding.

Methods A Markov model was used to estimate population outcomes and costs for NDO patients, receiving either Botox or best supportive care (oxybutynin). A Cost Utility Analysis was conducted, using 3 month cycles with a 2 year time horizon (discounted at 5%), plus one-way and probabilistic sensitivity analyses.

Results From the incremental cost-effectiveness ratio (ICER) of \$9,710/QALY, Botox is more cost-effective compared to oxybutynin. From the cost-effectiveness acceptability curve (CEAC), at a maximum acceptable ceiling ratio of \$50,000/QALY, the probability that Botox is cost-effective compared to oxybutynin is 0.987.

Conclusion Based on ICER and CEAC, Botox appears to be a cost-effective intervention for urinary incontinence due to neurogenic detrusor overactivity compared with anticholinergic.