245

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SYSTEMATIC LITERATURE REVIEW OF CLINICAL TRIALS OF ELDERLY PATIENTS WITH OVERACTIVE BLADDERS: A COMPARISON OF STUDY QUALITY

Hypothesis / aims of study

Overactive bladder (OAB) is a condition that disproportionately affects older-aged (i.e., ≥65) adults. Yet, in most randomized controlled trials (RCTs), patients aged ≥65 years are underrepresented. The purpose of this systematic literature review (SLR) was to identify RCTs that evaluated β-3 adrenergic agonists or muscarinic antagonists in elderly patients with OAB and assess study quality of the trials.

Study design, materials and methods

MEDLINE®, Embase®, and the Cochrane Collaboration Central Register of Clinical Trials (CENTRAL) databases were searched from inception through April 28, 2015 to identify published, peer-reviewed primary reports of RCTs that evaluated β-3 adrenergic agonists or muscarinic antagonists in elderly patients (either ≥65 years or study-described as 'elderly') with OAB. Study quality focused on internal and external validity and was assessed via the validated Quality Assessment Tool for Quantitative Studies from the Effective Public Health Practice Project (EPHPP) [1]. Additional indicators of external validity (multi-center and sample size) were also considered.

Table. Summary of Study Quality of RCTs Examining OAB Treatment with β-3 Adrenergic Agonists or Muscarinic Antagonists in Elderly Patients as Assessed by the Quality Assessment Tool for Quantitative Studies from the Effective Public Health Practice Project [1]

Study Design	Number	Selection Bias	Design	Confounders	Blinding	Data Collection Methods	Withdrawals & Dropouts	Overall Score	Study
Double-blind, multi-center (61 sites, International)	794	Mod	Strong	Strong	Strong	Strong	Mod	Strong	Wagg et al. J Am Geriatr Soc. 2013;61(2): 185-93.
Double-blind, multi-center (108 sites, US)	562	Mod	Strong	Strong	Strong	Strong	Mod	Strong	Dubeau et al. J Urol. 2014;191(2): 395-404.
Double-blind, multi-center (73 sites, International)	399	Mod	Strong	Strong	Strong	Strong	Strong	Strong	Chapple et al. Curr Med Res Opin. 2007;23(10): 2347-58.
Double-blind (sampling frame NR)	98	Mod	Strong	Strong	Strong	Strong	Strong	Strong	Dorschner et al. Eur Urol. 2000;37(6): 702-8.
Double-blind, multi-center (26 sites, European)	177	Mod	Strong	Mod	Strong	Strong	Weak	Mod	Malone-Lee et al. J Am Geriatr Soc. 2001;49(6): 700-5.
Double-blind, single-center	177	Mod	Strong	Weak	Strong	Strong	Weak	Weak	Kosilov et al. Urol Int. 2014;93(4): 470-3.
Open-label, single-center	41	Mod	Strong	Strong	Weak	Strong	Weak	Weak	Zaitsu et al. Adv Urol. 2011;2011: 854697.
Open-label, single-center	72	Weak	Strong	Strong	Weak	Strong	Mod	Weak	Minassian et al. J Obstet Gynaecol Can. 2007;29(9): 726-32.

Abbreviations: Mod, Moderate; NR, not reported; US, United States.
Note: Studies displayed in order of overall score and sample size.
Note: Quality indicators are based on the EPHPP. Overall Scores: STRONG = no WEAK ratings; MODERATE = one WEAK rating; WEAK = two or more WEAK ratings.

Results

The database searches resulted in 1,380 records that were screened according to *a priori* defined inclusion and exclusion criteria. A total of 8 papers meeting inclusion criteria (i.e., primary report of an RCT, intervention included a β-3 adrenergic agonist or muscarinic antagonist, randomized population was elderly) were included. Based on the EPHPP, four trials received an overall

score of ‘strong’, one received a ‘moderate’ rating, and three received ‘weak’ ratings (Table). However, one of the four ‘strong’ trials had a considerably smaller sample size than the other three (n=98 vs. n’s of 399, 562, and 794, respectively), and information on the sampling frame was missing for that trial. Additionally, many of the 8 published reports lack details such as baseline patient characteristics and trial inclusion/exclusion criteria, which are important for interpreting study results and for comparing trial populations to a general non-trial elderly OAB patient population.

Interpretation of results

Despite the predominance of OAB in older adults, only a small number of RCTs focusing on OAB treatment in the elderly patients were identified. Moreover, half of the trials were assessed as lacking in quality (i.e., received less than a strong rating on a validated quality rating scale). Based on the quality factors assessed, most trials were considered strong in terms of factors related to internal validity (e.g., data collection and measurement) but could improve in terms of external validity (e.g., minimizing potential for selection bias).

Concluding message

This SLR revealed only a limited number of RCTs that focus exclusively on elderly OAB patients. Only four trials were considered to be strong in terms of internal and external validity and important details were lacking from many of the published RCT reports. The findings from this review suggest that there is a need for additional RCTs on OAB treatment that focus on elderly population and the future trials should pay particular attention to minimizing threats to external validity. Reporting of baseline characteristics and study inclusion and exclusion criteria need to be improved.

References

1. EPHPP. Quality Assessment Tool for Quantitative Studies. (Internet). Hamilton, Ontario, Canada: Effective Public Health Practice Project (EPHPP); 2003. (cited 2015 September 16.) Available from: http://www.ephpp.ca/tools.html

Disclosures

Funding: Pfizer Inc. **Clinical Trial:** No **Subjects:** NONE