Effect of antimuscarinic drugs on cognitive functions in the management of overactive bladder in elderly

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Abstrak

Background: overactive bladder (OAB) affects 17-41% older adults in community dwelled setting. For several years, antimuscarinics have been validated as the first-line medical treatment for OAB. Despite abundant data obtained from clinical trials provisions the use of antimuscarinics, investigation about the effect of this drug on cognitive function in elderly remains scarce. The objective of this study is to investigate the effect of antimuscarinics therapy on cognitive functions in OAB geriatric patients. Methods: this study design is a systematic review and meta-analysis. Studies were collected using several search engines; those were PubMed, Science Direct, Cochrane, and EBSCOhost using predetermined MeSH keywords with Boolean operators. Selection of studies was done by three reviewers. Studies which fulfilled the inclusion and exclusion criteria underwent full-text review. For every selected full text, we extracted the following data if available: patients demographics, types of antimuscarinics used, placebo, dose, follow-up period, and Mini-Mental State Examination (MMSE) total score. Results: a total of 8 studies from an initial 146 publications were selected. There were 8 antimuscarinic agents evaluated in the studies, including Oxybutynin, Darifenacin, Tolterodine, Trospium, Imidafenacin, Propiverine hydrochloride, Fesoterodine, and Solifenacin. Oxybutynin was shown to have largest effect towards the decline of MMSE score [Mean difference: -2.90; 95% CI: -4.07, -1.73]. Darifenacin and Tolterodine were also shown to be significant in the decline of total MMSE score, although still inferior to Oxybutynin. Conclusion: the use of most antimuscarinics medication has little to no effect towards the cognitive function in the management of overactive bladder in elderly patients. However, Oxybutynin, Darifenacin, and Tolterodine was shown to have significant decrease in cognitive functions, as shown in the decline of total MMSE score.