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Title

Risk of dementia associated with bladder anticholinergic drugs: a case-control study of older adults in UK primary care

Priority 1 (Research Category)

Prescribing and pharmacotherapeutics

Presenters

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Abstract

Context: Evidence from previous studies suggest an association between anticholinergic drugs commonly used to treat overactive bladder (OAB) symptoms in older adults, and risk of dementia. It is uncertain whether differences exist between different bladder anticholinergic drugs in relation to the risk of dementia

Objective: To assess the associations between different anticholinergics used in the treatment of OAB, and the risk of dementia

Study design and analysis: Nested case-control study

Setting: General practices in England providing data to the Clinical Practice Research Datalink (CPRD) GOLD database

Population studied: 170,742 patients aged >=55 years, with first documented diagnosis of dementia between 1 January 2006 and 16 February 2022, matched by age, sex, and general practice, with 804,385 individuals without dementia

Intervention: Cumulative drug exposure (defined using total standardised daily dose (TSSD)) to different bladder anticholinergic drugs, and to a non-anticholinergic overactive bladder drug mirabegron, in the period 3 to 13 years before dementia diagnosis

Outcome measures: Odds ratios for dementia associated with different bladder anticholinergic drugs, adjusted for sociodemographic characteristics, clinical comorbidities, and use of other anticholinergic medication

Results: The study population comprised 62.8% females, and mean age was 81.9 (SD 7.6) years. 15,418 (9.0%) cases and 63,369 (7.9%) controls had exposure to bladder anticholinergic drugs in the 3-13 year period before diagnosis (or equivalent date for controls). The adjusted odds ratio (AOR) for dementia

associated with use of any bladder anticholinergic drug was 1.18 (95% CI 1.16-1.20). Among the different anticholinergic bladder drugs, dementia risk was most significantly increased with use of oxybutynin (AOR 1.31 [95% CI 1.21-1.42] and 1.28 [1.15-1.43]), solifenacin (AOR 1.18 [1.09-1.27] and 1.29 [1.19-1.39]) and tolterodine (AOR 1.27 [1.19-1.37] and 1.25 [1.17-1.34]) for exposure categories '366-1095' and '>1095' TSDD respectively. There was no statistically significant trend of association between mirabegron exposure and dementia risk.

Conclusions: Oxybutynin, solifenacin, and tolterodine were the OAB drugs most strongly associated with dementia risk in older adults. This emphasises the need for clinicians to consider prescribing likely safer alternatives which do not significantly increase the risk of dementia, when treating overactive bladder in older adults.