

Category: Care of the older person

Study type: Cohort study

Title: Antidepressant use associated with increased risk of hip fracture in the older population

Author: Michelle Kennedy

Citation: Torvinen-Kiiskinen S, Tolppanen AM, Koponen M et al. Antidepressant use and risk of hip fractures among community-dwelling persons with and without Alzheimer's disease. *Int J Geriatr Psychiatry*. 2017 Jan 5. doi: 10.1002/gps.4667. [Epub ahead of print]

Implications for practice and research

- Healthcare professionals need to be aware of the potential increased risk of injury for patients when planning treatments, particularly for patients presenting with multiple risk factors for falls.
- Future research should focus on establishing the severity of symptoms that antidepressants are used for in addition to a hip fracture event rate to ensure a balanced picture for determining treatment options.

Context

In 2011 there were 9.2 million people aged 65 or over in England and Wales, an increase of 1 million since 2001¹ and a figure which continues to rise. This increasing ageing population will inevitably bring healthcare challenges.

One such challenge is the rise in dementia including Alzheimer's disease (AD). The prevalence of Alzheimer's disease in the UK was 850 000 people in 2015 with estimates that it will rise to over 1 million by 2025 and over 2 million by 2051 if the current rise in the elderly population continues².

Hip fractures are a further risk for older people and a challenge for healthcare systems with approximately 73 000 hip fractures in the UK in 2011 anticipated to rise to 101 000 by 2020³.

These increasing figures are reflected globally.

Method

The purpose of this study was to establish if antidepressant use is associated with an increased risk of hip fracture among community-dwelling persons with and without AD.

This was a retrospective cohort study utilising data from several Finnish nationwide registers to select and match the cohort with AD and the 2 cohorts without AD. Hip fractures were identified by ICD-10 codes from hospital discharge registers. Antidepressant usage data was obtained from prescription registers and was further defined using the PRE2DUP method.

The sample size was 50,491 persons with AD with 100,982 persons in the 2 comparison cohorts.

All analyses were conducted separately among persons with AD and persons without AD. The Cox proportional hazard model was used and adjusted for confounders. Statistical tests were applied to the data using SAS statistical software.

Findings

The mean age of the study population was 80 years and 62% were women.

An increased risk of hip fractures was associated with antidepressant use among older community dwelling persons with and without AD. The risk of hip fracture was two-three times higher during antidepressant use compared with non-use. The age adjusted rate of hip fractures was significantly higher amongst persons with AD than amongst persons without.

This risk was highest at the beginning of the antidepressant use and remained elevated during the entire follow up period of 2-4 years.

These findings are consistent with previous studies on the association between antidepressant use and an increased risk of hip fracture.

Commentary

The study design of retrospective cohort study is not without its limitations, particularly in terms of misclassification bias as archived records are used so there is inevitably potential for inaccuracy in the data⁵. However the main advantages of this study design are that it avoids the long and potentially expensive follow up required for prospective studies.⁵ Utilising this study design also enabled a very large sample size which affords greater credibility to this research.

The importance of this study is to further strengthen the evidence base demonstrating a considerable link between antidepressant use and hip fractures in the general older population. This study also highlights the increased risk of sustaining a hip fracture for people diagnosed with AD on antidepressants as opposed to those without this diagnosis.

When considering the prevalence figures within the context section above it is clear the increasing ageing population will inevitably bring with them the increased diagnosis of AD and the accompanying healthcare challenges faced as a consequence of this. One such challenge is the raised risk of falls. In relation to this study age, AD, and the use of antidepressants are all individually classed as risk factors for falls⁴. The findings of this study add further evidence to the issues of multiple risk factors compounding the risk for falls and therefore potential for injury such as hip fracture.

This indicates there is a need for healthcare professionals to consider these potential multiple risk factors when planning treatment. In particular to consider the impact any planned treatment could have in creating additional risk factors for falls in this vulnerable patient group.

References

1. Office for National Statistics (2011) *what does the 2011 Census tell us about older people*. Available online: <https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/ageing> [Accessed 24/03/17].
2. Prince, M., Knapp, M. et al. (2014) *Dementia UK: Second Edition – Overview*. Commissioned Report: Alzheimer's Society.
3. NICE (2011) *Hip fracture: Costing report: Implementing NICE guidance (CG124)*. Manchester: NICE.
4. NICE (2013) *Falls in older people: assessing risk and prevention (CG161)*. Manchester: NICE.

5. El-Masri, M. (2014) Retrospective cohort study design. *Canadian Nurse*, 110 (3), 10.

Competing interests: None