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Research paper

Prescribing of antipsychotics in people with dementia in acute general hospitals in England: 2010–2012

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ABSTRACT

Purpose: Antipsychotics are believed to be over-used in the control, the behavioural and psychological symptoms of dementia. Hospitals are encouraged to audit antipsychotic use in people with dementia. The objectives of this study are to describe antipsychotic use in inpatients with dementia between 2010 and 2012 and to understand the impact of clinical and socio-demographic factors on their use.
Design: Retrospective and longitudinal analysis of antipsychotics dispensed to people with dementia in 34 English hospitals between January 2010 and October 2012. The unit of analysis was the period during which an inpatient was under the continuous care of one or more hospitals.
Results: Among the inpatients, 16.6% (10,440/63,079) with dementia received an antipsychotic in 13.9% of periods of care (13,643/97,902). Antipsychotic use was higher in inpatients with dementia and schizophrenia (57%) and in those inpatients with dementia and the symptoms and signs involving emotional state (38.2%). Antipsychotic use decreased between 2010 and 2012 (15.9% versus 12.1%, $P < 0.001$). In people with dementia without schizophrenia, the absence of cerebrovascular or ischaemic heart disease (OR 1.16 [1.12–1.21]), the presence of signs or symptoms of emotional state (OR 3.71 [3.29–4.19]), increasing deprivation (OR 1.02 [1.01–1.03]) and male gender (OR 1.10 [1.06–1.15]) were significantly associated with increased antipsychotic use ($P < 0.001$ in all cases). Increasing age (OR 0.88 [0.87–0.89]) was significantly associated with decreased antipsychotic use ($P < 0.001$).
Conclusion: Antipsychotic use in inpatients with dementia is declining but still more than one in eight periods of care are associated with use of an antipsychotic.

1. Introduction

Dementia is often first diagnosed in hospital [1]. Pneumonia, eating disorders, urinary tract infections, fractured neck of femur and Parkinson's disease are all more common co-morbid disorders in patients admitted with dementia [2]. Also, 25% of hospital beds are taken by people with dementia [1] and lengths of stay in hospital are longer, relative to those with the same conditions but without dementia [3]. In England, 10% of people with dementia stay in hospital for more than 50 days [3].

More than 90% of people with dementia experience the behavioural and psychological symptoms associated with dementia (BPSD). BPSD is a significant contributor to the direct and indirect costs of caring for patients with dementia, even after the severity of cognitive disorder and other co-morbidities have been taken into account [4]. Antipsychotics confer benefits in the treatment of some symptoms of BPSD but are associated with side-effects including sedation, parkinsonism, gait disturbance, dehydration, falls, chest infections, accelerated cognitive decline, stroke and death [5]. The risk of death is elevated for at least 30 days post-administration of the antipsychotic in particular populations, notably those of older age, male gender, more severe dementia and greater functional impairment [4]. Antipsychotic drugs may therefore help reduce behavioural and psychological symptoms, but this may be at the expense of quality of life [6].

Alternatives to antipsychotics for the treatment of BPSD include non-drug therapies (although the benefits may take time to appear), as well as the use of drugs to alleviate any underlying cause. Better pain management for example in people with dementia can reduce aggression and hostility. More research is, however, needed before antidepressants and anticonvulsants can be recommended in people with dementia [6].

Acute hospitals and the staff dealing with dementia are said not to be well prepared for the challenges that it brings [1]. Hospital

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staff are reported to feel that time pressure and staff shortages have a negative effect on their ability to deal with BPSD, and also on their ability to meet the needs of other patients. This is stated to lead to pressure on doctors to prescribe sedation, including antipsychotics, especially at night and in locations with a lower staff to patient ratio [7].

Whilst the best way to deliver care to people with dementia in hospital is still far from clear [7], one recommendation of the national audit in England was that hospitals put in place a process that separately audits prescribing of antipsychotics to people with dementia [3]. This paper describes changes in the prescribing of antipsychotics to people with dementia in acute general hospitals in England between 2010–2012.

2. Materials and methods

2.1. Objectives

The objectives were to describe change in the prescribing of antipsychotics in people with dementia treated as inpatients in England in 34 acute general hospitals between January 2010 and October 2012 and to understand the impact of clinical and socio-demographic factors on such use.

2.2. Data sources

Pseudonymised data were extracted from IMS Health's Hospital Treatment Insights database. This is a new database that combines hospital pharmacy transactions with information on diagnoses and procedures held within the Hospital Episode Statistics (HES) database. The HES database contains details of all admissions to National Health Service hospitals in England and is created from patients' clinical records. Following a patient's discharge from hospital, the patient's records are examined by highly trained coders based at each acute hospital. These coders convert the diagnoses and procedures described by the treating physicians into internationally recognized classifications, for example the International Classification of Diseases [8].

Drugs dispensed by a hospital pharmacy are either issued directly to the patient or to the ward where the drug will be used ("ward stock"). Ward stock is not issued together with any patient details and so cannot be linked to the patient's records in the HES database. Antipsychotics are issued both directly to patients and as ward stock. A survey of 10 Trusts supplying data to IMS carried out in October 2013 indicated, however, that the database would capture almost all hospital dispensing of atypical antipsychotics to people with dementia, but would miss most PRN (as required) use of haloperidol, should clinicians decide to use it outside of its license in the treatment of dementia-related behavioural disturbances [9].

Deidentification of the patient records is carried out by the Health and Social Care Information Centre before release of the data to IMS Health. The Health and Social Care Information Centre is the body established by the government in England to provide information, data and information technology guidance and services to the health and social care services. The database itself has received approval from the National Information Governance Board for England, is approved by the National Research Ethics Service Committee South West – Central Bristol Research and Ethics Committee and by the responsible authorities in each of the 34 acute general hospitals that provided data. The protocol for this study was also approved by the IMS Independent Scientific and Ethics Committee.

Data are grouped into age bands before release of the data to IMS by the Health and Social Care Information Centre. For example, the band "58–63 years" includes all those patients between the age of 58 and 63.

The deidentified data are stored at IMS in an ISO27001 approved secure environment and within a stand-alone network to which access is strictly controlled and audited. Data were analysed using SQL Server 2008 Management Studio.

Data extracted relate to the period January 2010–October 2012. Not all trusts were able to provide pharmacy data for all months. Data were available for 89% of months across all trusts, and analysis restricted to data from those months only.

2.3. Participants

Adult patients aged over 58 years with a diagnosis of dementia recorded in their clinical record by their treating physician between January 2010 and October 2012 were included. Of these inpatients, those that could not be linked to any drug (not just antipsychotics) during their inpatient stay were excluded. Also, 74% of those so excluded had a length of stay that was less than or the same as one night. These patients did not differ from those remaining in terms of age, gender or Index of Multiple Deprivation decile. The Index of Multiple Deprivation (IMD) is an index of deprivation as experienced by people living in a defined area. It measures deprivation along several dimensions, the index being a composite score derived from these [10]:

- income;
- employment;
- health;
- education;
- housing and services;
- environment and crime.

2.4. Unit of analysis

The unit of analysis used in this study was the period during which a patient was under continuous hospital care ("period of hospital care"). In England, the period of time under the care of a particular consultant in a hospital is known as an "episode". If care is transferred from one consultant to another within the same hospital, then a new episode starts, and the combination of these episodes is known as a "spell". If the patient is later transferred to another hospital, but the difference between the end of care in one hospital and the beginning of care in another is shown as less than two days in HES, then the period of care across the two hospitals is known as a "super-spell". The term "period of hospital care" as used in this study is thus the same as the "super-spell".

If a patient was linked to more than one period of hospital care during the study period, then each of those periods were entered separately into the study. Drugs were linked to a period of hospital care if the date of dispensing of the drug to that patient fell on or between the start and end date of that patient's period of hospital care.

The period of hospital care was chosen as the unit of analysis because some patients experienced different co-morbidities or symptoms at different times. However, it should be noted that as some patients were linked to more than one period of care, units of analysis may not be independent of each other.

2.5. Classifications

Patients with dementia (International Classifications of Disease [ICD10: F00-F03]) were grouped according to the following diagnostic or symptomatic criteria – presence or absence of schizophrenia, schizotypal and delusional disorders (ICD10: