

RESEARCH LETTERS

From Hospital to Community: Use of Antipsychotics in Hospitalized Elders

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Antipsychotic (AP) medications are often used in the hospitalized geriatric population for the treatment of delirium.¹ Because of adverse events associated with APs, efforts have been made to reduce their use in hospitalized elders,² but it is not clear if these recommendations have been widely adopted. We studied the use of APs in a cohort of hospitalized elders to better understand why APs are started and how often they are continued on discharge.

METHODS

We conducted a retrospective cohort study of patients aged 65 years or older admitted to a tertiary care hospital between October 1, 2012 and September 31, 2013. Using Stata's (StataCorp., College Station, TX) "sample" command,³ we included a subset of randomly selected inpatients who received more than 1 dose of oral APs (determined using the electronic medication administration summary). We excluded patients admitted under observation status or to the psychiatric service, those who were on APs prior to admission, and those who only received prochlorperazine for nausea. Using prior literature to identify terms frequently used to describe delirium (Figure 1), we created an algorithm and a chart abstraction form (see Supporting Information, Appendix 1, in the online version of this article).⁴ We tested these instruments in a preliminary chart review involving 30 patients. Disagreements were discussed with coauthors and resolved through consensus, resulting in some algorithm changes (eg, excluding a large number of patients who received only 1 dose of haloperidol post-operatively, because we hypothesized that this use could be a prophylactic measure).⁵ Two investigators extracted the remaining charts independently. We

used descriptive statistics and performed cross-tabulations on the selected variables.

RESULTS

Of 12,817 geriatric hospitalizations during the study period, 1120 (9%) were treated with antipsychotics. We randomly selected 300 of these for extraction: 54% were male, and 67% were admitted to the medical service (Table 1). The inpatient mortality rate was 10% (30/300). The most frequent indication for AP use was delirium (83%, 249/300). Only 35% of delirious patients received a formal assessment with the Confusion Assessment Method (CAM). The most commonly used atypical antipsychotic was quetiapine (86%); 55% received more than 1 antipsychotic medication during hospitalization, and 48% (143/297) of patients were continued on APs at discharge (excluding 3 patients transferred to other acute care hospitals).

Approximately 45% (134/300) had documented or suspected dementia, and 30% (89/300) were physically restrained during the hospital stay. Consultations with geriatrics were obtained in 40% (120/300) of the cases and with psychiatry in 10% (29/300) of the cases. Neurology is rarely consulted for delirium in our institution; thus, we did not collect data on those referrals. Electrocardiography (ECG) (recommended for patients at high cardiac risk⁶) was performed in 88% (265/300) of patients prior to AP administration and 52% (157/300) after. The corrected QT interval exceeded 500 ms in 15% (41/265) of patients prior to AP administration and 25% (39/157) after. Although few patients (12%) were admitted from nursing facilities, 66% (199/300) were eventually discharged to skilled nursing facilities (SNFs) or rehabilitation facilities; most of these patients (117/199, 59%) received AP treatment, compared to 38% of patients discharged to home (26/68).

DISCUSSION

In a cohort of hospitalized elders, we found that 9% were treated with APs. Most received APs for perceived delirium; in-hospital ECG monitoring was suboptimal. Half of the patients started on APs remained on them at discharge; those discharged to SNFs were more likely to receive ongoing AP treatment.

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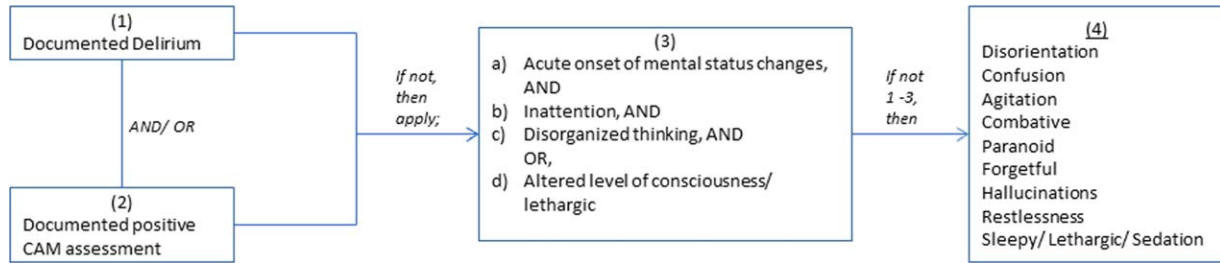


FIG. 1. Methodology for defining Delirium during chart review

TABLE 1. Demographic Data and Circumstances Surrounding AP Medication Initiation

Variable	N (%), Total = 300
Gender	
Male	161 (54)
Female	139 (46)
Inpatient mortality rate	30 (10)
Services	
Medicine	202 (67)
Surgery	98 (33)
Indication for APs use	
Delirium	249 (83)
Hallucinations	19 (6)
Anxiety	20 (7)
Other	38 (13)
Atypical APs	
Quetiapine	257 (86)
Olanzapine	29 (10)
Risperidone	26 (9)
Typical APs	
Haloperidol	166 (55)
Thorazine	4 (1)
Use of CAM	79 (32)*
Physical restraints	89 (30)
Documented or suspected dementia	134 (45)
Geriatrics consults	120 (40)
Psychiatric consults	29 (10)
ECG	
Prior to APs administration	265 (88)
After APs administration	157 (52)
QTc prolongation >500 ms	
Prior to APs administration	41 (15) [†]
After APs administration	39 (25) [‡]
Admitted from SNF	36 (12)
Discharge destination	
Home	68 (23)
SNFs, short and long-term rehabilitations	199 (66)
Transfer to other acute care hospitals	3 (1)
Continuation of APs at discharge	143 (48) [§]

NOTE: Abbreviations: AP, antipsychotics; CAM, confusion assessment method; ECG, electrocardiography; QTc, QT interval; SNF, skilled nursing facility.

*Denominator = 249; number of patients on whom APs were started for delirium.

[†]Denominator = 265; number of patients with ECG performed prior to APs administration.

[‡]Denominator = 157; number of patients with ECG performed after APs administration.

[§]Denominator = 297; 3 patients transferred to other acute care hospitals were excluded.

Our study is limited by its retrospective, single-center design, a lack of inter-rater reliability measurement (although our training process was designed to standardize extraction methods), and the infrequent

use of formal CAM assessment. Additionally, we were unable to determine how frequently APs were initiated in the intensive care unit. Any retrospective study is limited by the difficulty of distinguishing delirium from the behavioral and psychiatric symptoms of dementia, but we identified delirium using standard terms described in previous literature.

Our study also has a number of important implications. Because of a reported association between the use of APs and risk of death in the postacute setting,⁷ national provider organizations have called for a reduction in AP initiation in hospitalized elders.² However, this study indicates that APs continue to be prescribed for delirium, which may be attributed to the lack of behavioral modification options in most hospitals, such as acute care for elders (ACE) units and hospital elder life programs (HELP).^{8,9} Our findings suggest that this problem would be further amplified in hospitals that lack access to geriatrics expertise.

Without alternative behavioral options, patients are at risk for prolonged delirium, which is associated with significant suffering and subsequent risk of further cognitive impairment and death.¹⁰ Although evidence for the efficacy of APs in the treatment of delirium is limited and inconclusive, no better pharmacologic options exist. Hospitals that wish to reduce use of APs should therefore consider investing in environmental interventions (eg, ACE units, HELP), which lower the incidence of delirium and could, in turn, decrease the prescription and continuation of antipsychotics.^{8,9}

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Disclosures: Drs. Lagu and Loh had full access to all of the data in the study. They take responsibility for the integrity of the data and the accuracy of the analysis. Drs. Loh, Brennan, Lindenauer, and Lagu conceived of the study. Drs. Loh and Ramdass acquired the data. Ms. Garb analyzed and interpreted the data. Dr. Loh drafted the manuscript. Drs. Brennan, Lindenauer, and Lagu, and Ms. Garb critically reviewed the manuscript for important intellectual content. Dr. Lagu is supported by the National Heart, Lung, and Blood Institute of the National Institutes of Health under award number K01HL114745. The authors report no conflicts of interest.

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