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Depressed older adults may be less cared for than depressed younger ones

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ABSTRACT

The aim of the study was to investigate depression treatment use, either psychotherapy (PT) or antidepressant drugs (ADT) in the older and younger depressed population. Cohorts of 6316 elderly (≥ 65 year-old) and 25,264 matched non-elderly (25–64 year-old) depressed patients were created from a large national claims database of managed care plans from 2003 to 2006. Factors associated with ADT or PT were assessed using multivariate logistic models. During the 120 days following the depression diagnosis, the elderly persons were less often treated than the younger adults either by ADT (25.6% vs. 33.8%) or by PT (13.0% vs. 34.4%). ADT dispensing occurred later in the elderly group (51 vs. 14 days). ADT was associated with comorbid chronic conditions or polypharmacy in the elderly and younger adults. The selection of treatment (ADT or PT) was associated with the history of treated depression using the same type of treatment, in both groups. Thus, depression goes commonly untreated. Comorbidity was associated with higher ADT dispensing rates. However, although depressed elderly commonly presented with comorbidity, this age group was at higher risk of untreated illness or later treatment.

1. Introduction

Treating depression in older people raises several challenges (Alexopoulos, 2005). First, diagnosis may be difficult because depressive symptoms can be shared with other conditions (Gottfries, 1998; Walker and Steffens, 2010) or are sometimes considered as normal part of aging by caregivers (Alexopoulos et al., 2002; VanItallie, 2005). Secondly, treatment may be difficult because of concomitant polypharmacy resulting in an increased risk of drug–drug interaction (Mallet et al., 2007). However, psychotherapy (PT) and antidepressants drug treatments (ADT) are effective in treating depression in the elderly (Alexopoulos, 2005; Erlangsen and Conwell, 2014; Wilson et al., 2001), even in the case of concomitant morbidities (Sheikh et al., 2004). Moreover, the depressed elderly who commonly present with concomitant medical conditions may benefit from depression treatment, as alleviating depressive symptoms can contribute to improve symptom severity related to other diseases and decrease healthcare use (Bhattarai et al., 2012; Cooper et al., 2014; DiMatteo et al., 2000).

High rates of untreated depression were reported in both elderly and non-elderly populations (Ohayon, 2007). But, few studies compared depressed elderly and depressed non-elderly persons (Brunoni et al., 2013; Etchepare et al., 2014; Harris et al., 2015; Sanglier et al., 2011) with discrepant findings. In Brazil, ADT use was not associated with age (Brunoni et al., 2013). In France, ADT duration and adherence were better in the older patients than in the younger ones, although they were poor (Etchepare et al., 2014). In Australia, patients aged 60 and over were less likely to consult for mental health and to receive adequate treatment if they consult for mental health than younger adults (Harris et al., 2015). To the authors' knowledge, no one has focused on factors associated with the selection of depression treatment using large U.S. claims database. In a previous study, ADT drug treatment was improved in the elderly after the implementation of Medicare Part D and increased refund (Sanglier et al., 2011). However, the use of PT was not modified. Large automated healthcare claims databases provide a very broad and accurate picture of dispensed care in real-life settings. Highlighting specificities of healthcare use in depressed elderly population compared with younger adults may allow identifying potential unmet need and optimizing disease

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management in this population.

The aims of the study were (i) to compare the characteristics and the use of depression treatment between elderly depressed patients (65 years old and over) and non-elderly depressed adults (25–64 years old) and; (ii) to assess the factors associated with the use of depression treatment, either antidepressant drug treatment or psychotherapy, in each age group.

2. Methods

2.1. Study design and data source

A matched cohorts study was conducted using IMS lifelink® healthplan database, an anonymized US administrative claims database that includes medical, specialty, facility and pharmacy paid claims from more than 85 national managed care plans representing more than 47 million patients. However, only HMO Medicare risk plans are included in this database. None of the insurance plans included in this analysis had carve-outs that contractually separate mental health specialty care from primary care, or in any way prevent the identification of psychiatric medications, specialists, primary care physicians, or paediatricians. Billing diagnoses are coded using ICD-9 codes, procedures are coded using the Current Procedural Terminology (CPT) and Healthcare Common Procedure Coding System (HCPCS) codes, and dispensing drug claims are coded using the Generic Product Identifier (GPI). A group of elderly depressed patients was compared with a group of non-elderly adult depressed patients. Then, in each age group, the associations between ADT or PT dispensing on the one hand and patients' characteristics on the other hand were assessed.

2.2. Study sample

For the elderly cohort, eligible patients were aged 65 years and over and diagnosed with a new episode of depression as defined by Health Plan Employer Data and Information Set (HEDIS) (Scholle, 2005). New episode was defined as any incident claim reporting depression diagnosis from 2003/01/01 to 2006/12/31 (ICD-9-CM code 296.2, 296.3, 300.4, or 311.x) without any prior claim reporting depression diagnosis code during the previous four months and without any antidepressant claims during the previous three months. Each elderly patient with a new episode of depression was matched to four non-elderly patients (25–64 years old) with a new episode of depression according to gender, year of diagnosis and geographical region. The index date was the first date of the new depression diagnosis in the database. Patients were excluded from the analysis if they had any gap in enrolment over the year pre and post index date, or the presence of a diagnosis of schizophrenia (295.x) or bipolar disorder (296.0, 296.1, 296.4, 296.5, 296.6, 296.7, or 296.8) in the year pre or post index date. Young adults aged 18–24 were not considered for this analysis since they are subject to different regulatory warnings with respect to ADT prescribing in the U.S.

2.3. Study independent variables

Both age groups were compared in terms of patients' characteristics and type of provided care. Assessed patients' characteristics included: *Demographic characteristics at index date*: age (categorised in 5 years groups until 85 years old and older, in order to preserve patient anonymization), type of insurance coverage (HMO or not). *Depression diagnoser specialty*, categorized as mental health specialist (psychiatrist or psychologist), primary care physician (i.e. general or family practitioner, physician assistant…), other or unknown. *Anxiety disorder* at index date, defined as the presence of at least one claim with anxiety diagnosis (ICD-9-CM code: 300.0, 300.01, 300.02, 300.09) recorded during the month prior and the month after index date. *Depression history* was assessed through the presence of claim indicating that patient had a prior diagnosis for depression or not, had a claim for ADT (Generic Product Indicator codes GPI=58*), or had at least 2 claims for psychotherapy (i.e. having a Current Procedural Terminology [CPT-4] codes 908*) in the year prior to index date. Two or more occurrences of PT code during the period of interest were used as proxy for PT because patients with a single PT code may have undergone assessment or referral and not have yet received PT per se. Depression history was then categorized into 5 mutually exclusive categories: no depression history (no depression diagnosis and no ADT and no PT); prior untreated depression (diagnosis recorded and no ADT use and no PT); prior PT treated depression (prior PT use without ADT use); prior ADT treated depression (prior ADT use without PT); prior ADT and PT treated depression (prior use of PT and ADT). By construct, the variable will capture heterogeneity in depression history and depression treatment dispensing over 4 to 12 months. *Medical history* was assessed using specific ICD-9-CM diagnosis codes and through Chronic Disease Index (CDI), a score based on drug-dispensing. CDI score ≥ 1 defined the presence of one or more chronic morbidity (Malone et al., 1999). Depression items of CDI were discarded in order to avoid overlap with depression history assessment. *Polypharmacy* at index date was defined as the presence of 4 or more distinct non-antidepressant drugs (using the first 8 digits of the GPI code,) in the claims recorded during the month prior and the month after index date. *Medication profile.* Since chronic morbidities were explored using CDI, correlation with polypharmacy was likely to occur. As a consequence, these factors were studied using a combination of these two binary variables, which was called the medication profile. The different medication profiles (levels of complexity) considered were low (no comorbidity or polypharmacy), intermediate (comorbidity or polypharmacy), and high (comorbidity and polypharmacy) (Sanglier et al., 2011).

Healthcare co-payment history was estimated summing all the co-payments costs associated with claims recorded during the year prior index diagnosis.

2.4. Study outcomes

Type of care provided for depression was assessed during two different time horizons: the 120 days or the 364 days following index date. According to episode construct, using the 120 days observation period increase the chances that the dispensed treatment is related to the index diagnosis. Conversely, the 364 days follow-up period depicts long-term treatment needs disregarding episode construct. Two outcomes were assessed over those time periods: *Psychotherapy dispensing*, defined two or more occurrences of PT code during the period of interest. *Antidepressant dispensing,* defined as presence of any ADT claim (GPI=58x) during the considered time horizon. Time to ADT initiation was defined as the number of days between index date and the first following antidepressant claim.

2.5. Statistical analysis

Descriptive statistics were used to characterize study subjects by age groups. Measures of association between age group and patient characteristics were performed using univariate conditional logistic regression. Cumulative incidence plots were created to describe the crude relationships between age group and time to treatment for depression. Log-rank tests were used to compare curves for statistical differences between groups. A second plot