Prescription Pattern of Long Acting Haloperidol in a Tertiary Psychiatric Institution in South India: Ten - Year Retrospective Records Study

Original Article

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Abstract

BACKGROUND

Long acting antipsychotics injections (LAIs) have proven efficacious with regard to improvement in symptoms, adherence and reduction of caregiver burden. Yet, their prescription pattern is less studied. Hence, the aim of the study was to examine the prescription pattern of a long acting antipsychotic injection, haloperidol, in a large tertiary psychiatry hospital over a period of 10 years from 2009 to 2018.

MATERIALS AND METHODS

Retrospective study design was used to collect data for a time period of 10 years from 2009 – 2018. The data were collected from the hospital records for the total number of persons with mental health disorders used the tertiary center and from the central pharmacy records on the total long acting antipsychotics injection (Haloperidol LAI) dispensed during the study period.

RESULTS

Despite unchanging patient inflow, there was a decline in utilization of long acting haloperidol injection. The average number of haloperidol units utilized was 1595.5 ± 294.8 . The use sloped down from an average of 16 units per 1000 patients per month in 2009 to about 9 units per 1000 patients per month in 2018.

CONCLUSION

Steady declining pattern in the prescription of LAIs for the management of mental health disorders is observed, even though they are proven to be effective and have ease of use. It is important to explore the reasons and provide education and training for better utilization of LAIs among mental health professionals.

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INTRODUCTION

Schizophrenia is one of the mental disorders that presents with a chronic, usually unremitting, progressive course in the absence of medical intervention. According to the National Mental Health Survey of India (2015-16), schizophrenia spectrum disorders amount to lifetime morbidity in 1.4% of the population in India.⁽¹⁾ Patients with schizophrenia usually present with positive symptoms (hallucinations and delusions), negative symptoms (apathy, amotivation and anhedonia) and cognitive symptoms (attention deficit, problem solving and memory). Schizophrenia can lead to burden to the patients and their caregivers leading to reduced quality of life.

Antipsychotic drugs are the mainstay of treatment in schizophrenia spectrum disorders. Antipsychotic drugs are available in the form of oral and injectable preparations. Long acting antipsychotics injections (LAIs) have proven efficacious with regard to improvement in symptoms, adherence and reduction of caregiver burden.⁽²⁻⁵⁾ Standard guidelines are available regarding the use of LAIs.⁽⁶⁻⁸⁾ LAIs have also been used in relapse prevention in first episode psychosis and in maintenance therapy for affective psychoses. Long acting injections are one of the modes of management of non-compliance with psychiatric drugs, which ranges from 10-77%.⁽⁹⁾ The use of long acting antipsychotics has been widely studied all over the world. The use of LAIs are substantially lower when compared to the use of oral antipsychotics.⁽¹⁰⁾ Various patient, psychiatrist and mental health service-related factors could contribute to this discrepancy. Very few studies have explored the utilization of the LAIs in the Indian subcontinent. It is important to understand the changing patterns in the

utilization of LAIs over a period in time to understand the pattern and this would help us understand the reasons for the underutilization of LAIs in India. Hence, the aim of the study was to examine the cumulative utilization of LAIs in our large tertiary mental health institution in South India over the past 10 years.

MATERIALS AND METHODS

The study was conducted at the Institute of Mental Health, Madras Medical College, Chennai. Institute of Mental Health is one of the largest tertiary care mental health institution in South India providing mental health services to Tamil Nadu and neighboring states. Institutional ethics committee approval was obtained before the start of the study. The study was conducted in the month of June – August 2019.

A retrospective study design was used to collect data for a time period of 10 years from 2009 – 2018. The sources of data regarding the utilization of LAIs were the audited central pharmacy records and the yearly drug account book from the outpatient department. The validity of the data collected from these records were ascertained by the senior administrators. Yearly utilization of LAIs as a whole was collected from these records and was cross verified. Any discrepancy between the records was discussed with the concerned authorities and with senior administrators to reach a consensus. For this study, only the number of haloperidol decanoate long acting injection units (One Unit is an 1 ml ampoule containing 50 mg/mL of haloperidol decanoate) utilized in each year were collected. There was no change in the definition or composition of one unit in the study period. The flowchart of the research methodology followed is depicted in Fig 1.

Fig 1. Overall research methodology of data collection

Statistical Analysis

All the statistical analysis was done using SPSS 16.0. Descriptive statistics were used to analyze the data. Time series analysis and forecasting using Holt modelling was done to predict the future patterns in the utilization of haloperidol LAIs.

RESULTS

Results indicated a steady decline in the utilization of long acting Haloperidol injection, despite nearly the unchanging patient inflow (Mean = 130007 $\pm$ SD 7829) in the 10 year period of study. The average number of haloperidol LAIs utilized was 1595.5 $\pm$ 294.8 per year. The use sloped down from an average of 16 units per 1000 patients per month in 2009 to about 9 units per 1000 patients per month in 2018 (Table 1).

Table 1. Summary of the total census in the institution and number of haloperidol units utilized per year for the years 2009 - 2018

Year	OPD census	Total Number of Haloperidol Units Utilized
2009	121907	1916
2010	127919	2174
2011	139771	1363
2012	139110	1535
2013	133125	1660
2014	141735	1664
2015	121411	1436
2016	123743	1681
2017	123999	1373
2018	127354	1153

Fig 2. Predicted pattern of the utilization of long acting haloperidol using time series analysis

The time series analysis of the data and forecasting of the haloperidol LAIs is depicted in the Fig 2. The forecasting analysis indicated a progressive fall in the utilization of haloperidol LAIs for the years 2020-2022.

DISCUSSION

The aim of the study was to assess the utilization patterns of haloperidol LAIs in a large tertiary mental health institution in the last 10 years using the audited hospital records. The results indicate that there is a steady declining pattern in the prescription of LAIs for the management of psychotic disorders, even though they are proven to be effective and have ease of use. Similar patterns of declining utilization of LAIs has been observed in other studies from other parts of the world.⁽¹⁰⁾ This is despite high prevalence (10-77%) of medication non-adherence among patients with psychotic disorders.⁽¹¹⁾

Various reasons could be speculated for this decline in the use of LAIs in the clinical practice. Reasons could include the availability of better oral antipsychotics; and client, and clinician attitude towards LAIs and lack of training and fear among the younger generation of psychiatrists towards the use of LAIs.⁽¹²⁾ There is a general belief that injectable drugs are for the non-compliant patient even though they are a better choice in first episode psychosis and LAIs have a better continuation rate when compared to oral antipsychotics.⁽¹³⁾

Literature also points to patient experience with injectable drugs as being poor as they feel injections shift the control over therapy from patients to the physician.⁽¹⁴⁾ In general, LAIs have been looked at with some negativity in psychiatric practice. There is a presumption that the introduction of newer antipsychotics plays a role in the decline of FGA LAI utilization, probably replacing them in various instances, avoiding the unpleasant side effects associated with FGA LAIs.

Though the aspect of cost of LAIs is not studied in the current study as it was conducted in a public funded hospital, cost of LAIs has been a major factor behind their utilization in routine clinical practices in other settings.⁽¹⁵⁾ Long acting antipsychotic injections have a similar side effect profile when compared to oral antipsychotics.⁽¹⁶⁾ Substantial training of psychiatrists in the utilization of LAIs is pivotal to the judicious use of the same, the lack of which might be a key factor behind the reluctance to free usage of LAIs. The general awareness of treating psychiatrists to the utility of LAIs is affected by various factors from training to availability of the particular drug to his experience with the same. There are even reports of doctors' belief about patient

perception of LAIs as being negative assumptions: that a patient would refuse an injectable drug or presenting an injectable would strain the therapeutic relationship⁽¹⁷⁾ in spite of evidence to the contrary.⁽¹⁸⁾

This study is not without any limitations. Since this study was a central hospital record-based study, the same cannot be extrapolated on the utilization patterns among the other mental health settings such as private clinics and general hospital psychiatry units. Specific details regarding indications, dosing and duration in each patient cannot be arrived at in this study. This poses the difficulty of examining for which disorder the haloperidol LAIs have been prescribed. There were short periods of "out of stock" for haloperidol decanoate in the study site, which could decrease the estimate of utilization. Data on cumulative utilization of the other long acting injection Fluphenazine decanoate was not included, as it has been used sparsely in the past ten years. Other long acting injection preparations of risperidone were not included as they are not procured at the study site. Also, since the study includes the cumulative census of all the patients seeking help without regards to diagnosis, there seems to be an underestimation of utilization, as most of the LAIs are prescribed for patients with psychotic disorders and not others. Nevertheless, there is a wide gap in LAI utilization when compared to reports from other countries. This is projected to be 1.5%-1% of all patients whereas, a study from Europe shows a utilization rate of 25% in psychotic disorders.⁽¹⁹⁾

CONCLUSION

The results indicate that there is evidence to the declining pattern towards the utilization of haloperidol LAIs. It is important to understand the various reasons contributing to this and efforts should be made to encourage the use of LAIs wherever indicated in the routine clinical practice. More research is required regarding physician and patient attitude towards LAIs and finding ways to improve efficient and adequate utilization of LAIs, such as workshops on the practice of prescribing LAIs for clinicians, young psychiatrists and residents.

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CONFLICT OF INTEREST

Nil

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