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Schizophrenia in Elderly Patients

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Abstract
Schizophrenia is a severe mental illness characterized by positive and negative symptoms. The study was conducted to get an insight into the demographic characteristics, pharmacotherapy and prevalence of late-life schizophrenia in hospitalized elderly patients. The incidence of medical comorbidity and extent of polypharmacy was also explored. A retrospective observational study was carried out in two psychiatric hospitals in Lahore, Pakistan. Sample consisted of 50 schizophrenic in-patients of age 60 years and above. Data related to demographic details, history of psychiatric illness, presenting complaints and current medication therapy was collected mainly from patients' medical records and then analyzed. Results: Most patients were unmarried, illiterate and aged 60 – 65 years. 52% patients lacked insight of their disease. A large majority of the patients had up to 30 years history of psychiatric illness. Comorbidity was seen in 56% patients. Atypical antipsychotics alone were used in 50% patients and in combination with typical antipsychotics in 22% patients. Majority of patients had five medications in their current treatment regimen. The clinical services of pharmacist were not being employed and psychosocial therapy was also lacking. Conclusion: Schizophrenia is the one of the most commonly occurring psychiatric diseases in elderly patients with mental illness. Patients suffering from late-life schizophrenia undergo long-term institutionalization in psychiatric hospitals. Atypical antipsychotics are the first line treatment being used for schizophrenia. Polypharmacy is widely seen in geriatric patients. The clinical pharmacy services and pharmacist intervention should be made available to ensure rational use of drugs and delivery of pharmaceutical care.

Key Words: Schizophrenia, elderly, psychosis, antipsychotics, late-life, geriatrics, old age

INTRODUCTION

Schizophrenia is a devastating psychiatric disorder affecting 1% of the population worldwide [1] and it accounts for one of the largest proportion of mental health care expenditures [2]. Schizophrenia affects about 1 percent of the elderly population in the world [3, 4, 5] and also in South-East Asia [6]. According to the World Health Organization, it affects about 7 per thousand of the adult population, mostly in the age group 15-35 years. Though the incidence is low (3-10,000), the prevalence is high due to chronicity. 90% of people with untreated schizophrenia are in developing countries.
(WHO (online): www.who.int/mental_health/management/schizophrenia/en/ Accessed: 4/08/2010).
The highest risk for the onset of schizophrenia symptoms in both women and men occurs in the period from late adolescence to early adulthood. The main age range of risk for schizophrenia is 20 to 35 years. Relatively fewer individuals develop this particular set of symptoms for the first time before age 14 or after age 35. In general, the earlier schizophrenia develops, the more severe it is. Lifetime onset age differs significantly between men and women. Schizophrenia also tends to be more severe in men than in women [7, 8, 9]. Men get ill with schizophrenia, on average, 4-6 years earlier than women [10]. Onset is often later in women than in men [11].

Late-life schizophrenia patients fall into two groups: those patients with late-onset schizophrenia (i.e., those who developed schizophrenia for the first time in later adulthood after age 45 (late-onset schizophrenia) and those patients who had an earlier onset of schizophrenia but are presently middle-aged or elderly (early-onset schizophrenia) [5, 12, 13].
Schizophrenia is characterized by "positive" symptoms (delusions, hallucinations, thought disorganization), "negative" symptoms (blunted affect, social dysfunction, lack of motivation), cognitive impairments, and mood disturbance. However, heterogeneity among individuals can be seen in both signs and symptoms, both in pattern and intensity over time [4, 14].
Since the boundaries between schizophrenia and other psychotic disorders are ill-defined,

differential diagnosis, particularly during the early stages, can be difficult. No single sign or symptom is specific of schizophrenia so the diagnosis always requires clusters of symptoms to be recognized over a period of time. Diagnosis of schizophrenia relies mainly on examination of mental state, usually through a clinical interview, and observation of the patient's behavior. Diagnostic criteria may be under diagnostic guidelines according to ICD-10 or DSM-IV can be followed. (World Health Organization: Schizophrenia and Public Health (Pub. No. WHO/MSA /NAM/97.6) available online: www.who.int/mental_health/media/en/55.pdf) [15, 16].

The exact cause of schizophrenia is unknown. The biological basis of the disorder is not clear but is known to include genetic, environmental, and developmental factors [4]. There is evidence that brain chemical imbalances in certain neurotransmitters, proteins, and amino acids play a role in causing schizophrenia. Dopamine is primarily involved in schizophrenia. The dopamine hypothesis suggests that an excess of dopamine in the brain contributes to schizophrenia. Studies also show an under activity of glutamate in schizophrenic patients. This supports the dopamine hypothesis, since dopamine receptors inhibit the release of glutamate (http://helpguide.org/mental/schizophrenia_symptom.htm). Large evidence shows that other than abnormal brain chemistry, abnormalities in brain structure and maturational changes also play a role in schizophrenia [17].

Schizophrenia is often accompanied by other disorders and diseases that may be physical or mental. Old age individuals have increased likelihood of comorbid illness. Patients with schizophrenia have a greater risk of developing diabetes type 2, obesity, dyslipidemia and hypertension [18].

Early diagnosis and treatment is the key to successful recovery. The treatment of schizophrenia is a complicated issue requiring a treatment plan tailored to each individual's needs, which needs to be overseen by mental health professionals. Though there is no cure for schizophrenia, fortunately, there are effective treatments that can reduce symptoms, decrease the likelihood that new episodes of psychosis will occur, shorten the duration of psychotic episodes, and in general, offer the majority of people suffering from schizophrenia the possibility of living more productive and satisfying lives. (www.epigee.org/mental_health/schizophrenia_treatment.html).

Pharmaceutical options include antipsychotic medications of the first or second generation, as well as the many treatments adjunctively administered such as anticonvulsants, benzodiazepines, essential fatty acids, and lithium. There are also non-pharmaceutical options, such as electroconvulsive therapy and transcranial magnetic stimulation. Psychosocial interventions for schizophrenia include cognitive and behavioral therapies, family therapy, social skills training and substance abuse treatment. (Schizophrenia Research Institute - available online at: www.schizophreniaresearch.org.au/library/home.php?r=24&menu=Treatments&p=10).

Internationally accepted treatment guidelines recommend different lengths of treatment after the first episode of schizophrenia and after repeated episodes. The usual recommendation is at least one year of continuous treatment after the first episode, at least five years after the second episode and long-term maintenance treatment after the third episode. Violent and suicidal behaviors are indications for longer treatment even after the first or second episode. (European Neurological Diseases 2006. Report available at: www.touchbriefings.com/pdf/1981/bitter.pdf)

Antipsychotic medication remains a mainstay of treatment in both acute and chronic schizophrenia [19]. Medications can control symptoms, but virtually all antipsychotics have neurologic or physical side effects (e.g., weight gain, hypercholesterolemia, diabetes) [11]. Traditional antipsychotic agents bind to and block dopamine (D_2) receptors and effectively relieve positive schizophrenic symptoms. Atypical antipsychotics bind to dopamine and also provide additional blockade of serotonin

(5HT2A) receptors, relieving both positive and negative symptoms [20]. Conventional neuroleptics (e.g. flupentixol, haloperidol, chlorpromazine) have relatively little effect on negative symptoms and may cause considerable side effects (tardive dyskinesia (TD) and other extrapyramidal symptoms (EPS)), especially in elderly patients, whereas newer antipsychotics are less likely to cause EPS and may be associated with a lower risk of TD [20, 21, 22, 23].

The newer antipsychotics (e.g. clozapine, risperidone, and olanzapine) appear to be superior to conventional neuroleptics in treating patients with schizophrenia [24]. They have a reduced neurotoxicity and have the potential for reduced relapse rates [25]. However, it is now apparent that these newer antipsychotics confer a much greater risk for obesity, hyperlipidemia, and type II diabetes [23]. Antipsychotics are effective in reducing psychotic symptoms but they do not cure the underlying illness. In addition, the antipsychotic effect may take one to two weeks to be evident so doses should not be increased too rapidly [26].

In the treatment of chronic schizophrenia, there are risks associated with both neuroleptic maintenance (eg, tardive dyskinesia) and neuroleptic withdrawal (e.g., psychotic exacerbation or relapse) [27, 28]. Symptoms can include nausea, diarrhea, shakiness, delusions, hallucinations, or other psychotic symptoms. The risk-benefit ratio of neuroleptic maintenance vs. withdrawal should be assessed carefully in individual patients. A slow taper to the lowest effective dosage may be the preferred strategy in many patients [27].

In planning antipsychotic pharmacotherapy for elderly patients, age-related pharmacokinetic changes, polypharmacy for comorbid diseases, and concerns about the underlying conditions responsible for the psychotic symptoms must be considered [20]. The desired, individualized treatment approach needs to consider current symptoms, past therapeutic response, and adverse effects, as well as patient choice and expectations [29].

Aims:

The present study was conducted with the following objectives:

- To study late-life schizophrenia with respect to demographic characteristics like age, education and marital status of patients, age at onset of illness, duration of current admission.
- To find the prevalence of schizophrenia in hospitalized old age psychiatric patients.
- To study the incidence of medical comorbidity and extent of polypharmacy in elderly schizophrenic patients.
- To explore the management and pharmacotherapy of schizophrenia in the elderly.
- To observe and identify the pharmacist's role in the treatment.

MATERIALS AND METHODS

A retrospective observational study was conducted to get an insight of the prevalence, demographic variables and treatment of schizophrenia in hospitalized geriatric patients. The study was carried out in two psychiatric hospitals in Lahore, Pakistan, namely Punjab Institute of Mental Health and Fountain House. The sample consisted of 50 in-patients diagnosed with schizophrenia.

Inclusion Criteria: The target population was male and female patients of ages 60 years and above, seeking in-patient treatment for schizophrenia, including both early-onset and late-onset schizophrenia. Patients with comorbid illness were included.

Exclusion Criteria: All patients with psychiatric illness other than schizophrenia were not included in the study. Schizophrenic patients of age below 60 years were also excluded.

The data was collected from June, 2010 till August, 2010. A demographic data sheet was used to record the demographic details of the patients like age, sex, religion, marital status, level of education and financial status.

Patients' medical information was collected from the patient files which included date of admission, presenting complaints, past psychiatric history, family history of psychiatric illness, comorbidity and current

treatment regimen. Face to face semi-structured interviews with the patients were also done to know about their current state of consciousness, orientation and insight about the disease. Data was cross-tabulated and analyzed, and results were inferred.

Table 1. Demographic Characteristics of Patients (n=50)

Parameter	No. of Patients	Percentage
Age Range (years)		
60 - 65	45	90%
66 - 70	3	6%
71 - 75	0	0%
76 - 80	1	2%
81 - 85	1	2%
Marital Status		
Married	17	34%
Unmarried	22	44%
Divorced	9	18%
Widowed	2	4%
Education Level		
Illiterate	16	32%
Primary	8	16%
Middle	4	8%
Secondary	9	18%
Intermediate	5	10%
Graduation	6	12%
Masters	2	4%

Table 2. Presence of Insight about Disease (n=50)

Insight	No. of Patients	Percentage
Present	24	48%
Absent	26	52%

RESULTS

The study was carried out on 50 schizophrenic patients. It was found that a majority of the patients (90%) were of the age 60 – 65 years as seen in Table 1. Most of the patients (44%) were unmarried, 34 % patients were married and the rest were either divorced or widowed. Table 2 indicates that more than half of the patients (52%) had no insight about their disease whereas 48% patients were aware about it.

Figure 1 shows that the duration of current hospitalization of 28% patients was up to six months. This was followed by 20% patients having been currently hospitalized for duration of 5 – 10 years.

As seen in Figure 2, 18% patients had 6 – 10 years history of psychiatric illness. In this group, 12% patients were males and 6% patients were females. Similarly, another 18% patients had a 26 – 30 years history of psychiatric illness but in this group, females were lesser (4%) than the former group, and males (14%) were more.

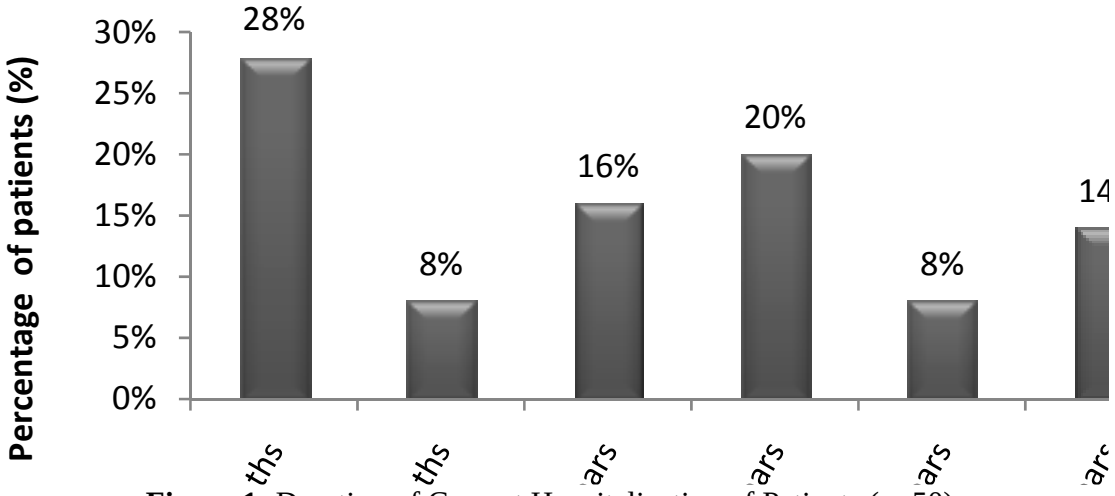

Figure 1: Duration of Current Hospitalization of Patients (n=50)

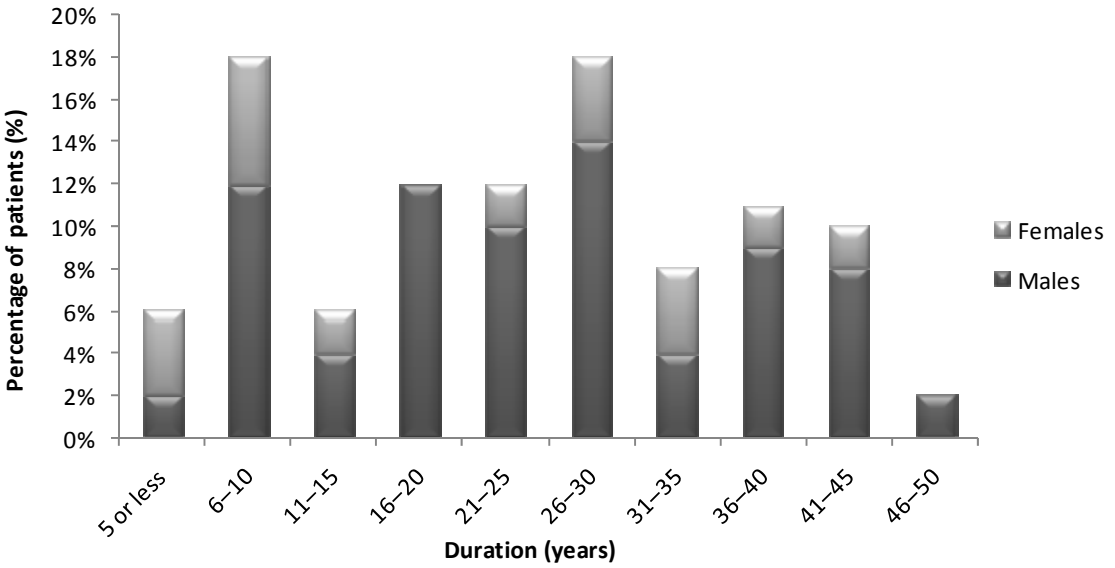

Figure 2: History of Psychiatric Illness in Patients (n=50)

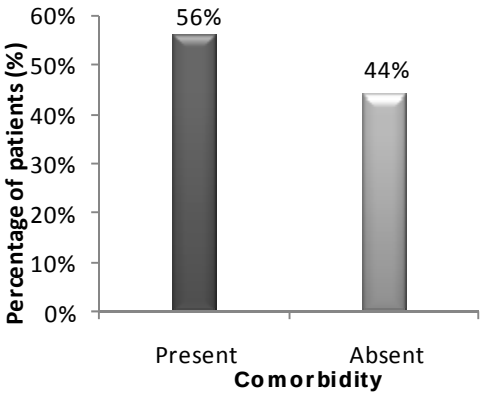

Figure 3: Prevalence of Comorbidity in Patients (n=50)

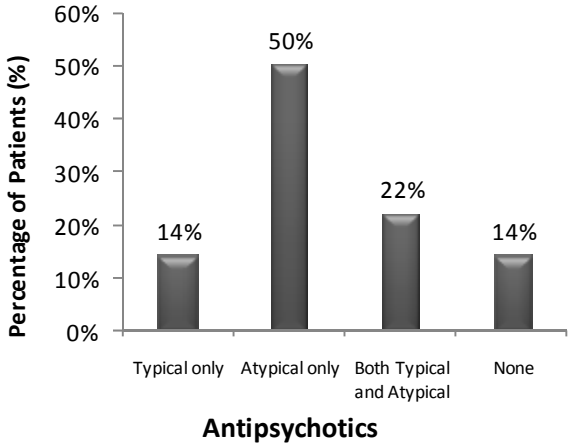

Figure 4: Antipsychotics in Current Treatment Regimen

Figure 3 shows that 56% patients had some comorbid illness. For majority of the patients (50%), the antipsychotic medications being used were atypical antipsychotics only. 22% patients were being given both typical and atypical antipsychotics, 14% patients were given only typical agents and 14% patients were not being given any antipsychotic drug as seen in Figure 4.Figure 5 shows that most of the patients (20%) had 5 medications in their current treatment, followed by 18% patients having 3 medications and 16% patients having 6 medications in their current regimen

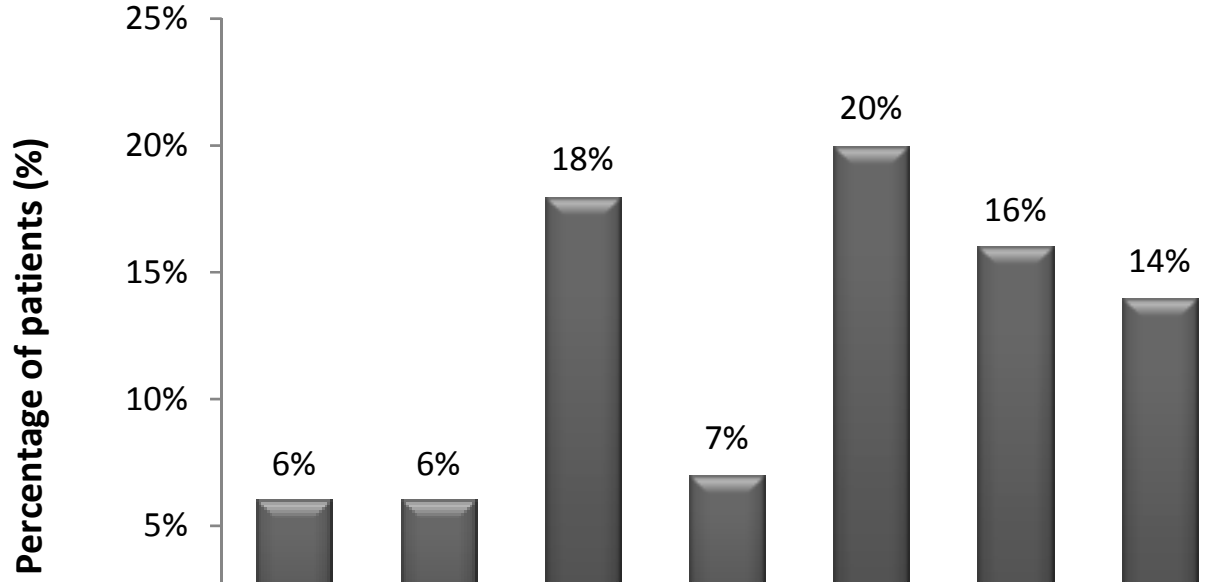

Figure 5: Polypharmacy

DISCUSSION

Schizophrenia has long been thought to be a disease of the young. But studies reveal that the disease can have an early onset and also late onset after the age of 40 [5, 13]. The present study was focused on late-life schizophrenia including patients who developed schizophrenia in later adulthood after the age of 40 years and also those who had earlier onset of disease but are currently old aged [12]. Old age schizophrenic patients hospitalized in two psychiatric hospitals were taken as sample and various aspects were studied.

It was found that schizophrenia is the most prevalent disease amongst the psychiatric illnesses for which old age patients were hospitalized in both psychiatric institutions. Majority of the patients admitted (90%) fall in the age group of 60-65 years and only 4% patients were above the age of 70 years. With increasing longevity, it is expected that the number elderly patients with schizophrenia will increase considerably in the coming years [12, 21].

Out of the patients studied, males were in a greater number (74%). Most of the male patients were unmarried (40%) while most of the female patients were married. Marriage should be encouraged as marriage can improve quality of life in individuals with schizophrenia, schizoaffective disorder and depressive symptoms, and also protects from suicidal ideas [30].

The study showed that most of the patients were illiterate (32%). Being educated has a great impact on self-care and how aware the patient is about his or her illness. It was seen that a majority of the patients were in denial and lacked insight into their disease. Same has been revealed in other researches [31, 32]. Insight deficits in schizophrenia may vary depending on factors such as course and phase of illness [33].

When schizophrenic elderly patients are hospitalized for psychiatric illness, they experience long inpatient stays [34]. Majority of the patients (28%) were currently admitted for a duration up to 6 months followed by those who were admitted for 5-10 years. Generally patients had poor family support which could be one of the main contributing factors of long length of stay. Poor prognosis can also be a contributor.

A history of psychiatric illness of 6-10 years and 26-30 years was found to be more prevalent. Females mostly had a later onset of

disease when compared with males (figure 2). Other studies also support this fact [5, 35, 36]. For most of the patients (80%) family history of psychiatric illness was not reported. Majority of the patients (64%) had undergone previous inpatient treatment for mental illness either once or more times.

Aggressiveness, being agitated and abusive, odd behavior, sleeplessness and paranoid delusions were the most reported presenting complaints at the time of admission. Significant number of patients also reported of hallucinations (visual and/or auditory). Other research findings also report hallucinations and delusions to be widely present in schizophrenic patients.

The pharmacotherapy of patients mainly consisted of antipsychotics drugs (86%). Other drugs that were prescribed included anxiolytics, anti-Parkinsonism and anticonvulsant drugs for relieving extrapyramidal symptoms. Antiepileptics and anti-depressants were also being given to some patients. In antipsychotics, majority of the patients were currently being treated with atypical antipsychotics only (50%) since they are the first-line agents in the treatment of schizophrenia (figure 4). They have a proved efficacy, greater improvement in negative symptoms and lower toxicity compared to traditional agents and reduced relapse rates have also been reported with atypical agents [20, 21, 25]. So, they are preferable especially for elderly patients as there is a lower risk of extrapyramidal side effects.

Elderly patients are especially likely to have comorbid disorders [37] and psychiatric illness may increase the risk for medical burden in the elderly [38]. The study reveals that more than half of the patients (56%) had comorbid illness. Cardiovascular disease (mainly hypertension) was found to be most prevalent followed by asthma and diabetes. Similar results have been seen in other studies which show that diabetes is more prevalent in patients with schizophrenia than general population and can be linked to the atypical antipsychotics because they cause metabolic disturbances as side effects [39, 40]. The atypical antipsychotic-induced metabolic side effects are associated with potential long-term cardiovascular health risks [41].

Polypharmacy is the use of five or more drugs at the same time in the same patient [42]. It has also been described as the the unnecessary overuse of drugs [43]. Polypharmacy is largely recognized as one of the important causes of drug- related problems. It was found in the study that majority of the patients had five drugs on their current prescription and a significant number had six drugs in the current treatment regimen. This also included multivitamin preparations and dietary supplements.

The study revealed that clinical pharmacy services were not being employed. It was observed that no prescription was double-checked by a pharmacist. In fact no clinical pharmacist was present. Although a pharmacist is an important member of the healthcare team but in both the hospitals there was no clinical pharmacist available. A pharmacist can not only perform his role in the rational use of drugs especially in geriatrics which is a special patient population but can also provide counseling and serve as an educator for both the patient and other members of the healthcare team. It was also observed that no regular psychotherapy or counseling sessions were being conducted though the effective treatment of schizophrenia requires a holistic approach and along with pharmacotherapy the patient should also be given psychosocial therapy to address family matters, functional impairment and social deficits [4].

CONCLUSION

Schizophrenia is the one of the most commonly occurring psychiatric diseases in elderly patients with mental illness. Patients suffering from late-life schizophrenia undergo long-term institutionalization in psychiatric hospitals. The long length of stay may be attributed to poor family support and relatively poor prognosis of schizophrenia in old age. Atypical antipsychotics are the first line treatment being used for schizophrenia. Polypharmacy is widely seen in geriatric patients. The clinical services of a pharmacist are not being

employed and psychosocial interventions are also lacking. Both pharmacist intervention and appropriate psychosocial therapy will help improve the patient's quality of life. Further detailed studies related to late-life schizophrenia should be conducted particularly addressing to patients in our society.

RECOMMENDATIONS

- Clinical pharmacist should be appointed to ensure rational use of drugs in schizophrenic patients and provision of pharmaceutical care in real terms.
- Regular psychotherapy and counseling sessions should be conducted in addition to the medication therapy.
- Hypersensitivity reactions and other adverse effects should be reported and well-documented.
- Patient profile and medication record of chronically hospitalized patients must be carefully maintained and updated.
- Permanent residents of the hospital should be provided appropriate aids to rectify auditory and visual impairment to the maximum level. Walking aids should be provided if required.

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