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Assessment of the extrapyramidal side effects among psychosis patients consuming antipsychotic medication with a view to develop an information leaflet on early recognition and management of extrapyramidal side effects in SS selected hospital at Raipur

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Abstract

Introduction: Patients suffering from physical illnesses are given specific treatment because the causes are specific and the signs and symptoms are specific. The doctor generally knows how the treatment works, and the patient co-operates with the doctors, and nurses, in order to get better. In psychiatric hospital the treatment may not be so specific and most patients are given more than one treatment. The nurse has an extremely important role to play in the treatment of the mentally ill. Her actions, attitudes and skills to help him to deal with his problems are themselves an essential part of his treatment.

Objectives: The main objective was to assess the extrapyramidal side effects among psychosis patients consuming antipsychotic medication. Secondary objective was to find out the association of extrapyramidal side effects with selected socio-demographic and clinical variables.

Methodology: 60 psychosis patients attending outpatient and inpatient department of psychiatry in Dr. Bhim Rao Ambedkar Memorial Hospital, Raipur, Chhattisgarh who receive antipsychotic medications were assessed for extrapyramidal side effect of antipsychotic drugs. The conceptual framework adopted for study was based on Health Belief Model. Modified Simpson Angus Scale (MSAS) was used to assess/measure extrapyramidal side effects. Patients scoring less than 3 were considered 'normal'. Patients scoring 3 to 5 were considered having 'minimal movement disorder'. Those scoring 6 to 11 have 'clinically significant degree of movement disorder'. And those scoring 12 to 17 were present with 'severe degree of movement disorder'.

Result: It was observed that highest number of subjects i.e. 37 (66.66%) were 'normal'. 11 subjects (18.33%) were with 'minimal movement disorder'. 7 subjects (11.66%) were with 'clinically significant extrapyramidal side effects. Only 5 subjects (8.33%) had severe degree of movement disorder. There was significant association of extrapyramidal side effects with duration of illness, duration of antipsychotic use and immediate side effect of antipsychotics at 0.05 level of significance.

Conclusion: It was concluded in this study that extrapyramidal side effects may occur among patients consuming antipsychotic medication. Also significant relationship was found between extrapyramidal side effects with duration of illness, duration of antipsychotic use and immediate effect of antipsychotic medication (1-2 days observation).

Keywords: extrapyramidal side effects, psychosis, antipsychotic medication

Introduction

Extrapyramidal side effects are due to the blockade of dopamine receptors in the basal ganglia, leading to Parkinson-like symptoms such as slow movement (bradykinesia), stiffness, tremor.

The prevalence of these motor abnormalities with first-generation antipsychotics side effects has varied from 2% to 90%. The most serious EPS, tardive dyskinesia (TD), has occurred in approximately 25% of patients medicated with these agents.

However, a number of studies have reported that antipsychotic medication may ameliorate a broad range of neuromotor symptoms such as catatonia, Parkinsonism, dyskinesia and akathisia. Even after the emergence of second generation of antipsychotics, extrapyramidal side effects continue to cause concern (particularly in vulnerable populations, such as elderly).

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Research Design

The research design chosen for the study was descriptive research.

Research Setting

The present study was conducted in Dr. Bhim Rao Ambedkar Memorial Hospital, Raipur (C.G.).

Population

The population of present study was psychosis patients consuming antipsychotic medication.

Sample

In this study, the sample was psychosis patients consuming antipsychotic medication admitted in Dr. Bhim Rao Ambedkar Memorial Hospital, Raipur.

Sample size

The sample size was 60.

Sampling Technique

Purposive sampling technique was used for this study.

Criteria for selection of sample**Inclusion criteria**

- Patients with psychosis consuming antipsychotic medication.
- Patients admitted in Dr. Bhim Rao Ambedkar Hospital or visiting OPD of the same.
- Patients available at the time of data collection.

Exclusion criteria

- Patients of age group below 5 years and above 55 years.
- Patients with psychosis, but not consuming antipsychotic medication.
- Patient without psychosis but consuming antipsychotic medication.
- Patients who are not willing to participate in the study.
- Patients who were not available at the time of data collection.

Description of tool

The tool for this study comprised of 2 parts-

Section A – Socio demographic data with incidence of illness

Section B – Modified Simpson Angus Scale to assess extrapyramidal symptoms

Validity of tool

Socio-demographic questionnaire along with information leaflet were sent to experts including Psychiatrists, a Psychologist, Teachers specialized in mental health nursing and a Psychiatric social worker. Their suggestions and modifications were implemented.

Reliability of tool

Simpson Angus Scale is a standardized tool used for assessing drug induced parkinsonian movement disorder. Internal consistency was measured by Cronbach's-coefficient and it was 0.83.

Ethical consideration

Researcher had taken formal permission from health care worker to conduct study. Only the samples who had signed

the consent form are included in the study. Confidentiality of the data is maintained strictly.

Pilot study

A pilot study was conducted in prior to the actual study after obtaining formal administrative permission for pilot study and main study from the Head of Department of Psychiatry at parent hospital, Dr. Bhim Rao Ambedkar Memorial Hospital, Raipur (C.G). Pilot study was done from 17-02-2014 to 23-02-2014. The average time taken for individual subject to complete the assessment was 25-30 minutes. The mean for normal was 0.025, for minimal movement disorder it was 0, for clinically significant it was 0 and for severe degree of movement disorder it was found to be 0. These 10 clients will not be part of main study.

Data collection for main study

After pilot study and validity of tools the investigator proceeded for data collection of main study. The data was collected from 05-03-2014 to 25-03-2014. It was decided to have a sample of 60 clients.

The data was collected with the help of Modified Simpson-Angus Scale that is a standardized tool and sample of 60 patients with psychosis consuming antipsychotic medication were selected on the basis of inclusion criteria by using nonrandom purposive sampling technique. The average time taken for each individual subject to complete the assessment was 25-30 minutes.

Data analysis and interpretation

Frequency and percentage distribution for the analysis of sociodemographic variables. Mean, median, percentage and standard deviation was used for analysis of extrapyramidal side-effects among patients with psychosis consuming antipsychotic medication. Chi-square test was done to find out the association of extrapyramidal side-effects with selected demographic and clinical variables.

Result

Section 1 (A): Frequency and percentage distribution of the socio-demographic variables of psychotic patients

In relation to age, maximum subjects 26 (43.33%) belonged to the age group 26-35 years, 22 (36.67%) belonged to age group of 15-25 years, 11 (18.33%) belonged to age group 36-45 years and only 1 (1.67%) belonged to age group 45-55. In terms of gender, maximum of subjects 31 (51.67%) fell under the category of female and 29 (38.33%) were male. Distribution of religion, shows that highest of the client 565 (93.33%) were hindu, 3 (5%) were muslim, and only 1 (1.67%) was sikh. The marital status depicts that 28 (46.67%) were married, 28 (46.67%) were unmarried and only 4 (6.66%) were separated.

The education depicts that 23 (38.33%) were having primary education, 19 (31.67%) were having higher secondary education. 9 (15%) were graduated, 6 (10%) learned high school and only 3 (5%) were having middle school education. With regard to occupation, maximum subjects 31 (51.67%) were unemployed, 12 (20%) were doing private job, 8 (13.33%) were self-employed, 6 (10%) were doing government service and minimum 3 (5%) were employed in farming. Regarding type of family, majority of subjects 37 (61.67%) lived in nuclear family, 20 (33.33%) lived in joint family and only 3 (5%) lived in extended family. According to monthly income, maximum group of

samples 23 (38.33%) belonged to income group Rs. 2000-4000, 18 (13%) belonged to income Rs. 4100-6000, 12 (20%) belonged to income group of Rs. >8000.

Section 1 (B): Clinical variables of patients

In terms of duration of illness maximum samples 26 (46.33%) belonged of >3years, 14 (23.33%) belonged to duration of 0-3 months, 12 (20%) belonged to duration of 3 months-1 year, and minimum 8 (13.34%) belonged to duration of 1 years-3 years.

Considering the duration of antipsychotic use, most of the subjects 23 (38.33%) were taking drugs for >1 year, 16 (26.67%) were taking drugs for 0-2 months, 11 (18.33%) were taking drugs for 2-3 months and few samples 10 (16.67%) were taking drugs for 6 months- 1 year.

In relation of type of antipsychotic use, majority of samples 40 (66.67%) were taking atypical antipsychotics and minority of samples 20 (33.33%) were taking mixed antipsychotics.

Related to Any movement disorder observed in the patient after antipsychotic use, maximum number of samples 36 (60%) replied 'yes' and minimum number of samples 24 (40%) replied 'no'.

Section 2: Frequency, percentage, mean and standard deviation of assessment of extrapyramidal side-effect of patient with psychosis consuming antipsychotic medication. The highest number of subject i.e. 37 (61.66%) are normal with no extrapyramidal side-effect, mean score was 6.7 and standard deviation was found to be 6.5. 11 (18.33%) samples have minimal movement disorder, mean score was 6.42 and standard deviation was found to be 0.49 and minimum samples i.e. 5 (8.33%) have severe degree of movement disorder, mean score was 14.4 and standard deviation was found to be 2.15.

Section 3: Association between extrapyramidal side-effects with selected socio-demographic and clinical variables.

There was no significant association of age, gender, religion, marital status, education, occupation, type of family, monthly income and type of antipsychotic with the occurrence of extra pyramidal side-effects with duration of illness (27.39) at 0.05 level of significance, duration of antipsychotic use (chi square 26.18) at 0.05 level of significance.

Conclusion

This study showed that the prevalence of severe degree of movement disorder was 8.33%, clinically significant movement disorder was 11.67%, minimal movement disorder was 18.33% and remaining 61.67% of patients with psychosis who were on antipsychotic drugs were normal i.e. without any movement disorder (extrapyramidal side-effects).

Discussion

The prevalence of severe degree of movement disorder was 8.33% clinically significant movement disorder was 11.67%, minimal movement disorder was 18.33% and remaining 61.67% of patient with psychosis who were on antipsychotic drugs are normal i.e. without any movement disorder (extra pyramidal side-effect). The female patients were 31 (51.67%) while the male patients were 29 (48.33%). Another striking finding which was noticed is that the

majority of the patients who were aged between 26-35 and 15-25 developed extra pyramidal side-effects with maximum frequency of 26 (43.33%) and 22 (33.67%) respectively. Significant association was found between extra pyramidal side-effects with duration of illness, duration of antipsychotic use and immediate side-effects of antipsychotic (1-2 days observation).

Limitations

1. Non-probability purposive sampling limits the generalization of findings.
2. Selection of those samples that were psychotic and consuming antipsychotic medication, and not the other patients (anxiety, depression, etc.) on antipsychotic medication, limit the generalization of findings.
3. Selection of only such subjects who were literate and co-operative during study, limit the generalization of findings.
4. Selection of both typical and atypical antipsychotic consuming patients limit the significant differences in terms of emergent extra pyramidal side-effects between the two classes of antipsychotics.
5. Study is limited only to 20 days.
6. Patients with age group above 15 years and below 55 years were considered for the study.

Recommendations

On the basis of this study, it is recommended that-

1. A similar study can be replicated on a large scale with separately in typical or atypical classes of antipsychotic drugs.
2. A study can be done to assess the knowledge of staff nurses regarding recognition and management of extrapyramidal side-effects.
3. A study can be conducted to assess the effectiveness of structured teaching programme on knowledge of staff nurses regarding extrapyramidal symptoms and its management among psychiatric patients.
4. A similar study can be replicated on samples consuming antipsychotic medication irrespective of their diagnosis.

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References

- Ahuja Niraj. A short textbook of Psychiatry, 6th Edition, Jaypee Brothers Publication, New Delhi 2011, 189-191.
- Basavanthappa BT. Nursing Research, 1st Edition, Jaypee Brothers Publication, New Delhi 2009, 72-75, 153-156.
- Beck Polit DF. CT Nursing Principles and Methods", 7th Edition, Williams and Wilkins publishers, Philadelphia 2004, 310-390.
- Frisch C, Noren, Lawrence Frisch E. Psychiatric Mental Health Nursing, 3rd Edition, Sanat Printers Publication, New Delhi 2007, 686-690.
- Kapoor Bimla. Textbook of Psychiatric Nursing, 1st Edition, Kumar Publication house, New Delhi 2003, 54.
- KimhsKollaki. Nursing Theories Conceptual and Philosophical Foundation, 2nd Edition, Springer Publishers, New York 2006, 109-111.
- Lalitha K. Mental Health and Psychiatric Nursing-An Indian Perspective, VBM Book house Publication 80-110.
- Mahajan BK. Methods in Biostatistics, 7th Edition, Jaypee Brothers Publication, New Delhi 2010, 80-110.
- Groove Burn N. Understanding Nursing Research, 2nd Edition, Harcourt Publishers, Philadelphia, USA 1995, 512-534.
- Neerja KP. Essentials of Mental Health and Psychiatric Nursing, Jaypee Brothers Publication, New Delhi 2008, 278-279.
- Sreevani R. A textbook of Mental Health and Psychiatric Nursing, Edition, Jaypee Brothers Publication 2012, 257.
- Stuart Gail W. Principles and Practice of Psychiatric Nursing", 9th Edition, Elseviers Publication, New Delhi 2009, 527-529, 752.
- Townsand Mary C. Essentials of Psychiatric Nursing and Mental Health Nursing, 1st Edition, F.A. Davis Pubilcation, Philadelphia 2005, 324-325, 511, 855.
- Blair DT, Dauner A. Extrapyramidal symptoms are serious side effects of antipsychotic and other drugs. Nurspract 1992;17(11):56, 62-64, 67.
- Gracia- Cabeza, Juan-Carlos Gomez, Jose Sacristan A *et al.* Subjective response to antipsychotic treatment and compliance in Schizophrenia. BMC Psychiatry 2001;1:7.
- McCreadie RG, Thara R, Padmavati R *et al.* Structural brain differences between never-treated patients with schizophrenia, with and without dyskinesia, and normal control subject: a magnetic imaging study. Arch. Gen. Psychiatry 2002;59:332-336.
- Coombs T, Deane FP, Lambert G, Griffiths R. What influences patient's medication adherence? Mental health nurse perspectives and a need for education and training. Int J Ment Health Nues 2003;12(2):148-52.
- Carlson CD, Cavazzoni PA, Berg PH *et al.* An integrated analysis of acute treatment-emergent extrapyramidal syndrome in patients with schizophrenia during olanzapine clinical trials. J Clin Psychiatry. Aug 2003;64(8):898-906.
- Leiberman JA *et al.* Comparative efficacy and safety of atypical and conventional antipsychotic drugs in 1st episode psychosis. Am J Psychiatry 2003;160(8):396-404.
- Stroup T, McEvoy J, Swartz M *et al.* The National Institute of Mental Health Clinical Antipsychotic Trials of Intervention Effectiveness (CATIE) project: schizophrenia trial design and protocol development. Schizophr Bull 2003;29:15-31.
- Tamminga C. Similarities and differences among antipsychotics. J Clin Psychiatry 2003;64:7-10.
- Correll CU, Leucht S, Kane JM. Lower risk of tardive dyskinesia associated with second generation antipsychotics. AM J psychiatry 2004;161(3):414-25.
- Lancer Rebekka, Gunner Eismann, Meike Kasten *et al.* Family history of primary movement disorders as a predictor for neuroleptic-induced extrapyramidal symptoms. British Journal of Psychiatry 2004;185:465-471.
- Leonardo Cortese *et al.* Can J Psychiatry 2004;49(1):31-36.
- Simpson G, Glick I, Weiden P *et al.* Randomized, controlled, double-blind multicenter comparison of the efficacy and tolerability of ziprasidone and olanzapine in acutely ill patients with schizophrenia disorder. Am J Psychiatry 2004;161:1837-47.
- Bergman J, Dwolatzky T, Brettholz I, Lerner V. Beneficial effect of donepezil in the treatment of elderly patients with tardive movement disorder. J Clin psychiatry 2005;66(1):107-10.
- Falkai P, Wobrock T, Lieberman J *et al.* WFSBP Task Force on Treatment Guidelines for Schizophrenia. World Federation of Societes of Biological Psychiatry (WFSBP) guidelines for biological treatment of Schizophrenia, Part 1: acute treatment of Schizophrenia. World J Biol Psychiatry 2005;6:132-91.
- Lee PE. Antipsychotic medications and drug induced movement disorders other than Parkinsonism. J Am Geriatric Soc 2005;53(8):374-379.
- Sachdev Perminder. Neuroleptic-induced movement disorder: An overview. Psychiatry Clin N Am 2005;28:255-274.
- Ascher-Savnum Haya *et al.* A prospective study of risk factors for nonadherence with antipsychotic medication in the treatment of schizophrenia. J Clin Psychiatry 2006;67:1114-1123.
- Cavazzoni PA, Berg PH, Kryzhanovskaya LA, Briggs SD, Roddy TE, Tohen M *et al.* Comparison of treatment- emergent extrapyramidal symptoms in patients with bipolar mania or Schizophrenia during

- olanzapine clinical trials. *J clin psychiatry* 2006;67(1):107-13.
32. Miller Del D *et al.* Extrapyramidal side-effects of antipsychotics in a randomized trial. *Br J Psychiatry* 2008;193(4):279-288.
33. Potvin S, Pampoulova T, Mancini-Marie A *et al.* Increased extrapyramidal symptoms in patients with Schizophrenia and a comorbid substance use disorder. *J Neurol Neurosurg Psychiatry* 2006;77(6):796-798.
34. Courey Tamara J. Detection, Prevention and Management of extrapyramidal symptoms. *Journal for Nurse Practitioners* 2007;3(7):464-469.
35. Gao K, Kemp DE, Ganocy SJ, Gajwani P, Xia G, Calabrese JR. antipsychotic- induced extrapyramidal side effects in bipolar disorder and Schizophrenia. *J clin psychopharmacol* 2008;28(2):203-9.
36. Moos DD, Hansen DJ. Metoclopramide and extrapyramidal symptoms: A case report. *J perianesth Nurs* 2008;23(5):292-9.
37. Sven Janno, Matt Holi M, Katinka Tuisku, Kristian Wahlbeck. Neuroleptic induced movement disorders in a naturalistic Schizophrenia population. *BMC Neurol* 2008;8:10.
38. Lindsey PL. psychotropic medication use among older adult: what all nurses need to know. *J Gerontol Nurs* 2009;35(9):28-38. Free PMC article.
39. Novak Lan, Svab Vesna. Antipsychotics side-effects influence on stigma of mental illness. *Psychiatria Danubina* 2009;21(1):99-102.
40. Madhusoodan S, Alexeenko L, Sanders R, Brenner R, Extrapyramidal symptoms associated with antidepressants. *Ann clin psychiatry* 2010;22(3):148-56.
41. Crossely Nicolas A, Philip Guire MC, Paddy Power. Efficacy of atypical v. typical antipsychotics in the treatment of early psychosis. *Br. J Psychiatry* 2010;196(6):434-439.
42. Leiberman Jeffery A. Clinical antipsychotic trials of intervention effectiveness. *Am J Psychiatry* 2011;168:770-775.
43. Piparva Kiran G, Buch JG, Kaplesh Chandrani V. Analysis of adverse drug reactions of atypical antipsychotic drugs in psychiatry OPD. *Indian J psycho Med* 2011;33(2):153-157.
44. Peluso Michael J *et al.* Extrapyramidal motor side-effects of first-and second-generation antipsychotic drugs. *BJ Psychiatry* 2012;200:387-392.
45. Michael Peluso J, Shon Lewis W, Thomas Barnes RE, peter Jones B. Extrapyramidal motor side-effects of first- and second- generation antipsychotic drugs. *Br. J Psychiatry* 2012;200:387-392.
46. Lafeuille Marie-Helene *et al.* Impact of atypical long-acting injectable versus oral antipsychotics on rehospitalization rates and emergency room visits among relapsed Schizophrenia patients. *BMC Psychiatry* 2013;13:221.
47. Venkatasubramaniam G *et al.* A longitudinal study of relation between side-effects and clinical improvement in Schizophrenia. *Clin Psychopharmacology Neurosci* 2013;11(1):24-7.
48. Lorraine Lipscombe L, Peter Austin C. Schizophrenia research 2014;154(1-3):1-128.