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PREFERRED DRUG USAGE PATTERN IN SCHIZOPHRENIA IN A TERTIARY CARE TEACHING HOSPITAL OF NORTH INDIA

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ABSTRACT

INTRODUCTION: In the recent years fungal contaminants in the hospital environments are in rise and taking a critical place in human infectious diseases along with bacteria and virus. Fungi enter in to the hospital from outdoor either through failed HVAC systems or through people entering into the hospital. The aim of the study is to assess and evaluate the environmental colonization of molds in the controlled hospital environments.

MATERIALS AND METHODS: For this prospective, observational study we have chosen 9 operation theatres, 10 intensive care units, one labor room and one CSSD of this hospital. SDA contact plates and swabs streaked on SDA plates were kept for a period of one hour by closing the OT or ICU doors. Plates were incubated for 10 days at 28° ±1°C. The results were expressed as the mean of two plates in colony-forming units per square centimeter (CFU/cm^2).

RESULTS: In this study 53.4% were Cladosporium, 23.9% were Aspergillus 8.18% Fusarium, 7.5% Penicillium, 2.9% Rhizopus, 1.59% Alternaria, 1.19% Curvularia and 0.9% of Sterile mycelium isolates were observed. Highest number of Filamentous fungi CFU was noted in Cath lab and Obstetric and Gynec OT. Among ICUs predominant of CFU were observed in Acute Medical ICU and Cardiac ICU.

CONCLUSION: A contingent measures like regular HVAC systems maintenance and efficiency check, stringent hospital infection control practices adherence and strong visitor policy will help to minimize the risk of infections.

KEY WORDS: Molds, Hospital, Fungi.

INTRODUCTION

Schizophrenia is a complex , chronic psychiatric condition characterized by an array of symptoms including delusions, hallucination disorganized speech or behaviour and impaired cognitive ability . [1]antipsychotics are the main drugs used for the treatment of schizophrenia but since schizophrenia is not limited to specific symptoms, so apart from antipsychotics various other psychotropic drugs like mood stabilizers, antidepressants, anti anxiety CNSstimulants as well as other concomitant drugs like anticholinergic , NSAIDs, beta blockers etc. Are used to potentiate the efficacy of antipsychotics

For facilitating rational use of medication there are standard guidelines for prescribing drugs3. This prescribing pattern varies according to clinician , symptoms and availability of drugs.

Various studies are conducted in various parts of the world as well as India to study the prescribing pattern of schizophrenia [4,5,6,7,8]. They include small/large groups of people in their region . This study was undertaken at department

of pharmacology SGRRInstitute of Medical Sciences and Department of Psychiatry , Shri Mahant Indresh Hospital, Dehradun. To develop a baseline data on prescribing pattern of drugs in schizophrenia

MATERIALS AND METHOD

It was an observational, retrospective, cross sectional study carried out by department of pharmacology SGRRInstitute of Medical Sciences and Department of Psychiatry , Shri Mahant Indresh Hospital, Dehradun. It was done after the approval from the institutional ethical committee of SGRRInstitute of Medical Sciences. Prescriptions of schizophrenic patients coming to psychiatry OPD during the time period of 2016-2017 were collected , entered into a preformed format and analysed as per WHO prescribing indicator.

Inclusion criteria: All genders diagnosed with schizophrenia with minimum 1 antipsychotic drug
Exclusion criteria: Patients with psychoactive drugs, organic brain disorder, systemic illness, pregnant or lactating mothers.

Data was entered in Microsoft Excel and analysis was carried out. Categorical data is presented as percentage (%).

OBSERVATION AND RESULT

A total of 841 schizophrenic patients' information were collected from the psychiatry OPD. Most of the patients are from rural areas (54%). Out of 841 patients , 354 (42.09%) were females and 487 (57.91%) were males. The majority of males are unmarried and most of the females were married.(table 1) . male is to female ratio is 1.3:1.

TABLE 1: GENDER DISTRIBUTION AND MARITAL STATUS

Total (841)	Males (487)	Unmarried	284
		Married	200
		Divorced	3
	Females (354)	Unmarried	102
		Married	247
		Divorced	5

The total no. of drugs prescribed in 841 prescriptions were 3844. This comprises 2135 (55.54%) psychotropic drugs and 1709 (44.46%) concomitant drugs. Table 2. Shows total no. Of all drugs and their percentage out of total no. drug prescribed .

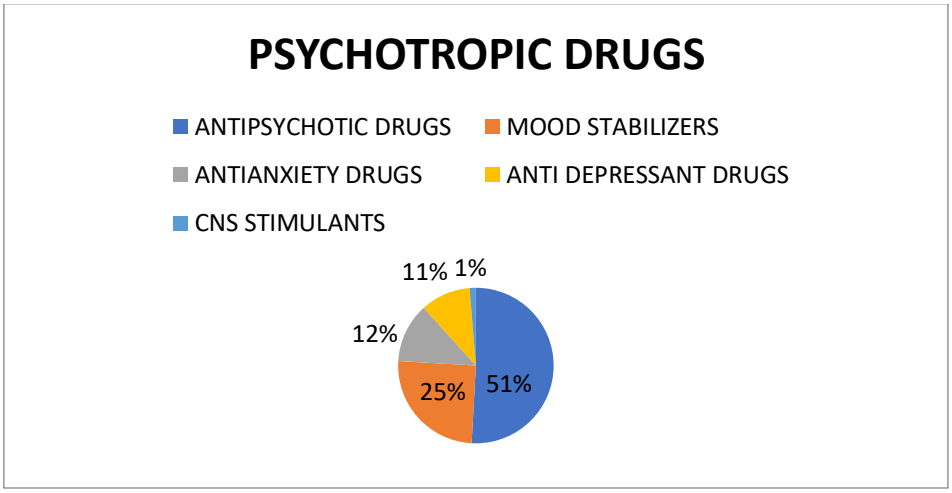
TABLE 2: TOTAL NUMBER OF DRUGS PRESCRIBED IN ALL PATIENTS

		Types of drugs prescribed	Totalno. Of drugs	Prcentage (out of total no. Of drugs prescribed)
Total no. Of drugs Prescribed 3844	Psychotropic drugs no. 2135 (55.54%)	Anti psychotic drugs	1086	28.25%
		Mood stabilizers drugs	535	13.92%
		Antianxiety drugs	264	6.87%
		Anti depressant drugs	222	5.77%
		CNS stimulant drugs	28	0.72%
	Concomitant drugs n0. 1709 (44.46%)	anticholinergic drugs	606	15.76%
		Multivitamins/ supplements	404	10.51%
		Beta blockers	352	9.15%
		Hormones	107	2.78%
		NSAIDs	84	2.18%
		antacid	51	1.33%
		Antihelminthics	48	1.24%
		antihypertensives	34	0.88%
		Other	23	0.59%

Among psychotropic drugs , antipsychotic 1086(51%) was the most prescribed psychotropic drug followed by mood stabilizers 535 (25%) , anti anxiety 264 (12%) , anti depressants 222(11%) and CNS stimulants 28 (1%). (chart 1).

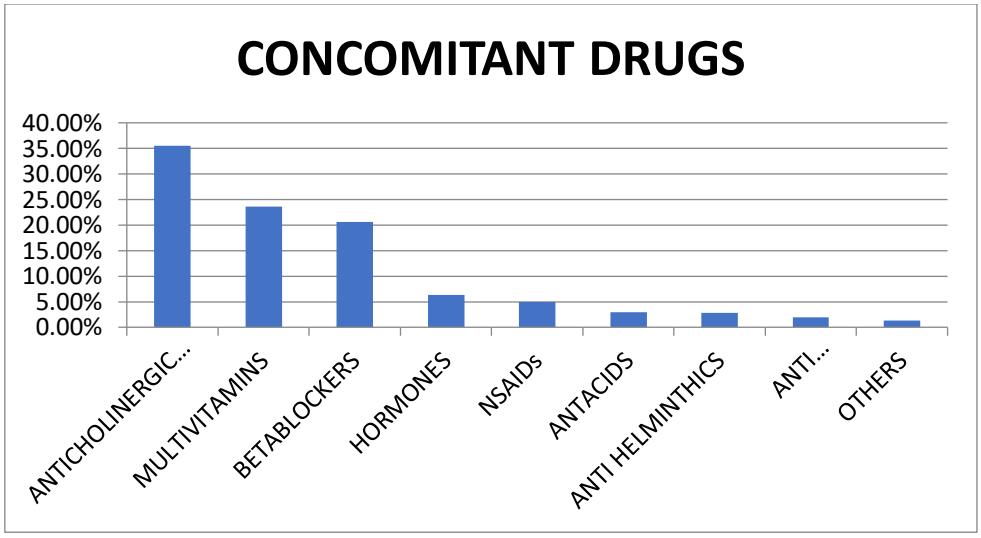
Among antipsychotic drugs 520 (47.88%) were atypical antipsychotic drugs and 566 (52.12%) were typical antipsychotic drugs.

CHART 1: PERCENTAGE OF PSYCHOTROPIC DRUGS PRESCRIBED



Among concomitant drugs, anticholinergics 606(35.46%) were the most prescribed drug followed by multivitamins/ supplements 404 (23.64%), beta blockers 352(20.60%), hormones 107 (6.26%), NSAIDs 84 (4.91%) , antacids 51 (2.98%), anthelminthic 48(2.80%), antihypertensive 34(1.99%) and others 23 (1.34%). [Chart 2]

CHART 2: PERCENTAGE OF CONCOMMITANT DRUGS PRESCRIBED



On calculating drugs per encounter in schizophrenia , antipsychotic drugs per encounter was 1.29, mood stabilizers, 0.64, anti anxiety 0.31, antidepressant 0.26 and CNS stimulant 0.03. Among concomitant drugs use of anticholinergic per prescription was 0.72.
out of 3844 drugs , 3712 (96.57%) were oral drugs and the rest were injectables. [TABLE 3]

TABLE 3: ROUTE OF DRUGS ADMINISTRATION

	Oral route	Injectable route
Total no. Of drugs (%)	3712 (96.57%)	132 (3.43%)

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On analysing the number of drugs per prescription, monotherapy was used in only 19 patients (2.26%). The majority of patients were given polytherapy with maximum up to 13 drugs per prescription which was given in 1 patient constituting 0.12 %. Most common was four drugs per prescription which was observed in 294 (34.96%) patients (table 4)

TABLE 4: DRUG UTILISATION PATTERN PER PRESCRIPTION

drug utilisation pattern			
	Number of drugs used per prescription	Number of patients (total = 841)	
1.	One drug	19	2.26%
2.	Two drugs	95	11.30%
3.	Three drugs	165	19.61%
4.	Four drugs	294	34.96%
5.	Five drugs	199	23.66%
6.	Six drugs	41	4.87%
7.	Seven drugs	19	2.26%
8.	Eight drugs	07	0.83%
9.	Thirteen drugs	01	0.12%

Among there 841 patients, all patients were prescribed with antipsychotic drugs Antipsychotic monotherapy was given in 649 (77.17%) patients, dual therapy in 139 (16.53%) and triple therapy in 53 patients (6.30%). Among other psychotropic drugs, mod stabilizers were prescribed in 484 patients with monotherapy in 434 (89.67%), dual in 49 (10.12%) and only 1(0.21%) with triple therapy .247 patients were prescribed with anti-anxiety with 230 (93.12%) with monotherapy and 17 (6.88%)dual therapy . Antidepressant drugs were prescribed in176 prescriptions with 130 (73.86%) monotherapy and 46 (26.14%) dual therapy.. Other than psychotropic drugs, anticholinergics were prescribed in 585, beta blockers in 340 and hormones in 107 prescriptions. (table5).

TABLE 5: DRUG UTILISATION PATTERN OF SOME DRUGS

DRUG UTILISATION PATTERN OF SOME DRUGS							
Drug	Antipsychotic (1086)	Mood stabilizers (535)	Anti anxiety (264)	Anti depressant (222)	Anti cholinergic (606)	Beta blockers	Hormones
No. Of patients prescribed	841	484	247	176	585	340	107
Monotherapy	649	434	230	130	564	328	107
Dual therapy	139	49	17	46	21	12	00
Triple therapy	53	1	00	00	00	00	00

To increase the compliance of the patient,FDC is prescribed to 625 patients. Out of which 445 received antipsychotic FDC , 95 received antidepressants FDC. 85 prescriptions were FDC of miscellaneous drugs. (TABLE 6)

TABLE 6: DRUGS GIVEN IN FIXED DOSE COMBINATION

Type of drugs	Number of patients
Antipsychotic drugs	445 (71.2%)
Anti depressant drugs	95 (15.2%)
Miscellaneous	85 (13.6%)
Total	625 (100%)

As per WHO prescribing indicator, average no. Of drugs per encounter were 4.57, percentage of drugs prescribed by generic names were 97%, percentage of antibiotic encounter 0, percentage of injectable. 3.43% and percentage of drugs prescribed from essential drug list formulary is 67%. (TABLE 7)

TABLE 7: WHO CORE PRESCRIBING PATTERN

S.no	WHO prescribing indicator	Number or percentage
1	Average no. Of drugs per encounter	4.57

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2	Percentage of drugs prescribed by generic names	97
3	Percentage of encounters with antibiotics	00
4	Percentage of encounters with injectables	3.43
5	Percentage of drugs prescribed from essential drug list formulary	67

DISCUSSION

During the time period of study total 841 patients came to the department. Out of these males were more in no. As compared to females which is in accordance with many studies.[7,9,10,11,12] This is opposite to the findings of Oommen et al[13], Alsabhan et al,[14] , Javed et al[15],in which females were more in number. The male to female ratio was 1.3:1.

Most of the patients were married which is similar to the study done by Javed et al [15].A study done in Vellore also stated that the high proportion of psychiatric patients are married [16].So it can be stated that marital stress can be a factor for schizophrenia. Since SGRRis the tertiary care centre in the Garhwal region covering most of the hilly areas, majority of the population was from rural areas.

Total no.of drugs prescribed in 841 prescriptions was 3844 among which 55.54% was psychotropic drugs and 44.46% was concomitant drugs. Among psychotropics ,antipsychotic was prescribed 1086 times (28.25%). Majority of drug used were atypical 52.12% which was similar to various studies[9,11,12,17,]

Antipsychotic polypharmacy is defined as prescribing 2 or more concomitant antipsychotic drugs as standard therapy.[18]According to English and Zinc, monotherapy is not so effective treatment of schizophrenia especially in patients with treatment resistant symptoms.[19]. As per nice 2020 guidelines, antipsychotic drugs can be used to treat patients with schizophrenia as monotherapy or in combination therapy. In our study, the majority of patients were given antipsychotic monotherapy. Similar to SBDutta etal[17] and Nukula et al[12] in contrast to this , Sushma et al [4], stated to use more polytherapy as compared to monotherapy. Triple therapy in our study was given to 6% patients whereas in study done in Korea it was 10%.[6]

On calculating no.patients prescribed with certain drugs, antipsychotic was prescribed to all patients, mood stabilizers to 57.55%, anti anxiety to 29.37%, and anti depressants in 20.93% patients. When it was compared to Alkadhar et al[9] and Dutta et al[17] this percentage is way more. Anticholinergic drugs were prescribed in around 69.56%, as compared to other concomitant drugs, in a study by Hekaru Horiet al[20], around 30.5% patients were prescribed anticholinergic. This variation can be due to the difference in sample size.

Drugs per encounter were calculated for different drugs . for antipsychotic it was 1.29 ,anti anxiety 0.31 ,mood stabilizers 0.64 and anti depressants 0.26 which is very less as compared to Tripathi et al.[7] in which it was 14.4, 33.13, 4.02 and 6.5 respectively . Anticholinergic per encounter was 0.72 which is also more as compared to Tripathi et al.

The prescribing pattern in our study was analysed using WHO core prescribing pattern..[21] The average no. of drugs per encounter was 4.75%which is more than the WHO guidelines. The optimum level is < 3.[7,13]The percentage of drugs prescribed by generic name was 87%,. This is close to nukula et al 12 and oommen etal [13] in which it was 74% and 79.4% , however WHO recommends 100% use of generic drugs. The optimum level of injectables should be <10% and so is in our study . No antibiotics were prescribed in 841 patients. And 57% of drugs were from the essential drug list more as compared to nukula et al[12]and Tripathi et al[7].

CONCLUSION

Prescription pattern studies show variability in utilization of antipsychotic drugs and concomitant drugs in different places. In our study , males were more in no. As compared to females and majority of patients were married . Atypicals were more prescribed and among concomitant drugs anticholinergic were most commonly prescribed drugs. Antipsychotic monotherapy was commonly prescribed. Apart from no. Of drugs per encounter, other parameters were in accordance with WHO core prescribing pattern.

Limitations

No study is without any limitation. Firstly, this is a unicentric study so results can't be applied to the majority of the population. Second, it was cross sectional study, so we can't discriminate between continuous antipsychotic

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polypharmacy from temporary antipsychotic polypharmacy. Third, No follow up was done so no data on adverse drug reaction was collected. Next limitation is, only classification of drugs was studied, so detailed data on drugs is not available .Also, No IPD patients were included.

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