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Original Research Article

ANALYSIS OF ANTIDEPRESSANT DRUGS UTILIZATION PATTERN IN A TERTIARY CARE TEACHING HOSPITAL IN KUMAON REGION

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Abstract

Background: Antidepressant prescribing patterns have shown an increasing trend over the years. Apart from depression, these drugs are indicated in various mental disorders like Generalised Anxiety Disorder (GAD), panic disorder, obsessive compulsive disorder (OCD), phobia e.g., social phobia, kleptomania, Post Traumatic Stress Disorder (PTSD) etc. This study was intended to assess the utilization pattern of antidepressant drugs in the patients visiting the psychiatry unit of a tertiary care teaching hospital. **Materials and Methods:** It was an observational study involving the patients prescribed with at least one antidepressant drug in the psychiatry department. Their demographic and clinical details along with details of medication were recorded. **Result:** Depression was the most common mental disorder encountered followed by anxiety and anxiety with depression. Monotherapy of antidepressant drugs was significantly prescribed. In dual therapy, mirtazapine was most commonly prescribed and combination of fluoxetine and mirtazapine was prescribed in majority of patients. **Conclusion:** Drug utilization studies impart an awareness about changing trends in the prescription pattern so it is imperative to understand the role of antidepressants in mental disorders.

INTRODUCTION

Utilization of Antidepressant drugs have pointed toward an increasing trend over the years.[1] These drugs are principally used in treatment of depressive illness. However, they are used in management of various psychiatric disorders like anxiety, panic disorders, eating disorders, enuresis, sexual dysfunction, impulse control, phobias, aggression and some personality disorders as well. The antidepressant drugs frequently prescribed are tricyclic antidepressants (TCAs), serotonin-specific reuptake inhibitor (SSRIs), serotonin–norepinephrine reuptake inhibitors (SNRI) and monoamine oxidase inhibitors.[2] The newer antidepressants such as duloxetine, escitalopram, sertraline, and mirtazapine are now being prescribed in mainstream of psychiatric patients. [3-7] SSRIs are deemed to be the drugs of choice for management of depression according to National institute of Clinical Excellence and the American Psychiatric Association guidelines. [8,9] Apart from depression, antidepressants are utilized for other mental disorders as well like SSRI's are 1st line drugs for GAD, panic disorder, OCD, phobias like PTSD, social phobia, agoraphobia. These drugs are also prescribed in eating disorders and somatoform disorders. TCAs are also efficient in management of chronic pain e.g., herpetic neuralgia, diabetic neuropathy. They are also used in treatment of pruritus, enuresis, ADHD in children and migraine.[10] However, limited studies were conducted on utilization pattern of antidepressant drugs in psychiatric patients of Uttarakhand. Therefore, this study was conducted to analyse the drug utilization patterns of antidepressant drugs to facilitate their rational use in patients with mental disorders in Kumaon region.

MATERIALS AND METHODS

This was an observational study, conducted for one year after obtaining the approval from Institutional Ethical Committee in Government Medical College and Dr Susheela Tiwari Government Hospital, Haldwani. Patients (>18 years) who came to psychiatry department for the first time and prescribed with an antidepressant drug were selected

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in the study. Diagnosis of psychiatric disorder along with criteria for drug selection and details of treatment were also recorded in the study specific data collection form.

All the required data was collected and entered in Microsoft Excel (MS Excel) spreadsheet. SPSS (Statistical Package for Social Studies) was used to analyze the data. Percentage (%) was used to represent the categorical data. To examine the association between the dependent and independent categorical variables, chi square test was performed. All tests were carried out at a significance of 5% thus value of <0.05 probability was considered statistically significant and <0.01 value was considered highly significant.

RESULTS

Among all mental disorders, depressive disorder was the most common psychiatric disorder observed in the psychiatric population i.e., in 45(21.9%) patients. This was followed by anxiety disorders in 35(17.2%), mixed anxiety and depression in 16(7.8%) and somatoform disorder in 15 (7.4%) of all 205 patients. [Table 1]

Table 2 shows the prescribing pattern of 9 antidepressants in total 18 mental disorders. In depression, escitalopram was prescribed maximum in 13 patients followed by mirtazapine in 11 patients. Most of the patients diagnosed with anxiety were prescribed with paroxetine (20) followed by mirtazapine (7) where as in somatoform disorder, maximum patients were prescribed with duolexetine (8) and paroxetine (4). Amitriptyline (10) was the most common drug prescribed in insomnia followed by mirtazapine (3). Fluoxetine was the most

common drug prescribed in OCD, alcohol dependent syndrome (ADS), bipolar disorder and psychosis with depression i.e., in 8, 6, 5 and 8 patients respectively.

It was observed that prescribing pattern of paroxetine was significant in anxiety and panic disorder whereas use of duolexetine was significant in somatoform disorder. Utilization of fluoxetine was significant in OCD and ADS while amitriptyline was significantly prescribed in insomnia [Table 3].

In total 205 study participants, mono and dual therapy of antidepressant drugs was prescribed in 194(94.6%) and 11(5.4%) patients respectively. It was observed that association of antidepressants prescribed as monotherapy in various mental disorders was significant [Table 4]. Many antidepressant drugs were utilized in our study according to the clinical condition of the patients. Monotherapy was instituted in 194 patients. As monotherapy, paroxetine 56(28.9%) was most commonly utilized antidepressant drug followed by escitalopram 35(18%) and fluoxetine 28(14.4%). [Table 5]

Dual therapy was prescribed in 11 patients. Mirtazapine was the most commonly prescribed in 7(63.6%) patients along with other antidepressant drugs. Most common combination therapy prescribed was fluoxetine and mirtazapine in 3(27.3%) followed by mirtazepine and desvenlafaxine 2(18.2%). [Table 6]. Mirtazapine was prescribed in dual therapy in 7(63.6%) patients. [Table 6] It was observed that prescribing pattern of mirtazapine in dual therapy was significant. [Table 7]

Table 1: Utilization of antidepressant drugs

S. No	Indications	N = 205	%
1.	Depression	45	21.9
2.	Anxiety	35	17.2
3.	Anxiety with depression	16	7.8
4.	Somatoform disorder	15	7.4
5.	Insomnia	14	6.9
6.	Panic disorder	13	6.4
7.	OCD	12	5.9
8.	Alcohol dependent syndrome	9	4.4
9.	Bipolar depression	8	3.9
10.	Psychosis with depression	8	3.9
11.	Post traumatic stress disorder	6	2.9
12.	Pain disorder	6	2.9
13.	Premature ejaculation+ anxiety	5	2.5
14.	Adjustment disease	4	2
15.	Claustrophobia	4	2
16.	Acute transient psychotic disorder	3	1.5
17.	Post menopausal symptoms	1	0.5
18.	Conversion disorder	1	0.5

Table 2: Prescribing pattern of antidepressant in mental disorders

Number	Indications	Fluoxetine	Mirtazepine	Sertraline	Escitalopram	Paroxetine	Bupropion	Desvenlafaxine	Amitriptyline	Duolexetine
1.	Depression	4	11	5	13	3	4	6	0	0
2.	Anxiety	0	7	2	8	20*	1	1	0	0
3.	Anxiety with depression	1	5	4	2	4	1	0	0	0
4.	Somatoform	1	0	0	0	4	0	1	1	8*

#										
	disorder									
5.	Insomnia	0	3	1	0	1	0	0	10*	0
6.	Panic	0	1	1	0	11*	0	0	0	1
7.	OCD	8*	0	1	2	3	0	0	0	0
8.	ADS	6*	0	0	0	2	1	0	0	0
9.	Bipolar	5	1	0	1	0	2	1	0	0
10	Psychosis with depression	8	0	0	0	0	0	4	0	0
11	PTSD	0	0	0	3	3	0	0	0	0
12	Pain disorder	0	1	0	1	1	1	0	0	3
13	PME+ anxiety	0	0	0	0	5	0	0	0	0
14	Adjustment disease	0	0	0	0	1	0	0	0	0
15.	Claustrophobia	0	0	0	3	1	0	0	0	0
16.	Acute transient psychotic disorder	2	1	0	0	0	0	1	0	0
17.	Post menopausal symptoms	0	0	0	0	0	0	1	0	0
18.	Conversion disorder	0	0	0	0	1	0	0	0	0

p value <0.05 is significant

Table 3: Association of antidepressant drugs and mental disorder

Antidepressant drug	Type of mental disorder	p-value*
Paroxetine	Generalised anxiety disorder	< 0.001
Paroxetine	Panic disorder	< 0.001
Duolexetine	Somatoform disorder	< 0.001
Amitriptyline	Insomnia	< 0.001
Fluoxetine	OCD	< 0.001
Fluoxetine	Alcohol dependent syndrome	< 0.001

*p <0.05 is significant

Table 4: Type of therapy

AED therapy	Number (n=205)	%
Monotherapy	194 (p<0.05) *	94.6
Dual therapy	11	5.4

*p <0.05 is significant

Table 5: Antidepressant drug utilization for monotherapy

Drug	Number (n=194)	%
Paroxetine	56	28.9
Escitalopram	35	18
Fluoxetine	28	14.4
Mirtazepine	7	3.6
Desvenlafaxine	13	6.7
Sertraline	12	6.1
Duolextine	12	6.1
Amitryptyline	10	5.1
Bupropion	8	4.1

Table 6: Antidepressants as dual therapy

Antidepressant	Number(n=11)	%
Mirtazepine +fluoxetine	3	27.3
Mirtazepine + desvenlafaxine	2	18.2
Paroxetine + sertraline	2	18.2
Mirtazepine + escitalopram	1	9.1
Mirtazepine+ paroxetine	1	9.1
Paroxetine+ bupropion	1	9.1
Escitalopram+ bupropion	1	9.1

Table 7: Association of mirtazapine and dual therapy

Antidepressant drug	Type of therapy	p-value*
Mirtazapine	Dual therapy	< 0.001

*p <0.05 is significant

DISCUSSION

In our study, depression was the most common psychiatric illness among the psychiatric population i.e., in 45 (21.9%) patients. Similar observations were seen in a study done in Singapore by Teck Hwee Soh et al. [11] Study done by Vasundhara et al,[12] also showed that the most common psychiatric disorder diagnosed was depressive disorder 94 (31.3%), followed by somatoform disorders 51 (17.3%).

In our study paroxetine was used significantly in generalized anxiety and panic disorder. According to standard text, among all the SSRIs, paroxetine is the most potent serotonin inhibitor and it also has wide therapeutic index which may be beneficial when treating the patients of anxiety and panic disorders.[13] Study done by Chi-Un Pae et al,[14] also state the use of paroxetine in various anxiety disorders.

According to our study, use of duolexetine is statistically significant in somatoform disorder. Standard text also approves the use of duolexetine in various pain disorders, [13,15] because it causes sodium ion channel blockade which contributes to its analgesic property. It also inhibits the reuptake of serotonin and norepinephrine in the central nervous system thereby showing antidepressant property.

Use of amitriptyline was statistically significant in insomnia in our study. In addition to its antidepressant use, amitriptyline is also used in treatment of migraine prevention, insomnia, neuropathic pain disorders, fibromyalgia and nocturnal enuresis because it has broader spectrum of action compared to SSRIs, SNRIs and other antidepressants like it also act as an antagonist or inverse agonist on α1-adrenergic receptor, histamine H1 and H2 receptors and muscarinic acetylcholine receptors and serotonin receptors e.g., 5-HT2A, 5-HT2C, 5-HT3, 5-HT6, and 5-HT7 receptors.[13,15,16] Study done by Jenna Wong et al also showed the use of amitriptyline in insomnia.[10]

According to our study, use of fluoxetine is statistically significant in OCD and alcohol dependent syndrome (ADS). Standard text books also state the utilization of fluoxetine in various mental disorders like ADS, OCD, PTSD, cataplexy, obesity, bulimia nervosa, panic disorder and premenstrual dysphoric disorder. [13,15-17]

In our study, monotherapy was preferred over dual therapy as 194 (94.6%) patients were treated with monotherapy which was found to be statistically significant. Most common antidepressant prescribed as monotherapy was paroxetine which was given in 56 (28.9%) patients and in dual therapy, fluoxetine and mirtazapine were prescribed in 3(27.3%) patients. Triple therapy was not observed. Among all antidepressants, association of mirtazapine and dual therapy was statistically significant. Our findings are in contrast to a study done by Avanthi et al6 on prescribing pattern of antidepressants in which polytherapy (91%) was preferred over monotherapy. Most common antidepressant prescribed in their study as monotherapy was fluoxetine whereas fluoxetine and escitalopram combination (49%) were most commonly prescribed while sertraline and escitalopram (4%) were the least common prescription. Our observation was comparable to Tripathi et al,[18] that only 9.62% patients were prescribed with more than one antidepressant.

CONCLUSION

Our study revealed that monotherapy of antidepressant drugs (94.6%) was most commonly observed for treating mental disorders. Paroxetine monotherapy (28.9%) was most commonly prescribed where as in dual therapy, mirtazapine was significantly practiced. Paroxetine was prescribed significantly in treating GAD and panic disorder, whereas duolexetine was utilized significantly for somatoform disorder, amitriptyline was significantly prescribed in insomnia and fluoxetine was significantly used for OCD and alcohol dependent syndrome. Our conclusions can be applied for further studies intending to compare changes in the utilization of antidepressant drugs.

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