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Study of Adverse effects of antidepressants used in Major Depressive disorder

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Background: Antidepressants are a commonly prescribed class of psychotropic medication. The escalation of their use over the last few decades and more so in the last few years has been well documented in studies conducted all over the world. This study aims at analyzing the adverse effect pattern of different classes of antidepressant medication used alone and in combination for the treatment of Major Depressive Disorder (MDD).
Methods: A sample size of 262 patients suffering from Major Depressive Disorder (MDD) and being treated with antidepressant class of drugs were included in the study. The adverse effects associated with the different therapy options were collected by interviewing the patient and through clinical monitoring based on the Anti-depressant Side Effect Checklist (ASEC) and are discussed and analyzed.
Results: Weight gain was a common occurring adverse effect associated with a few of the therapy options. It occurred a total of 99 times of the 262 cases. TCAs use was found to be associated with weight gain; individual use of TCAs led to weight gain and accounted for 12.1% cases.Dry mouth was another common adverse effect and it occurred in a total of 60 cases of the total 262.It was seen that sexual dysfunction as an adverse effect was more associated with the use of SSRIs and also to some extent SNRIs class of drugs.
Conclusion: Current antidepressant drugs are effective and generally well tolerated. Adverse effects of antidepressants can decrease compliance and delay recovery and hence need to be monitored.There is no class of antidepressant medication that is completely free of adverse effects.

I. INTRODUCTION

Major Depressive Disorder (MDD) often requires long term therapy with one or more classes of antidepressant drugs. This becomes important because antidepressant use is often associated with a wide spectrum of adverse effects.

Adverse effects as a result of treatment with antidepressants can decrease patient compliance and may also hinder with recovery.

Adverse effects caused by the antidepressants are the most common reason of premature discontinuation of therapy and non-compliance.

Physicians should educate and reassure their patients about potential adverse effects.Benign and transient side effects are more common than dangerous or irreversible effects.[1]This knowledge can help in reducing the rate of medication noncompliance, which is important because even after a medication has produced the desired benefit, it needs to be continued to prevent relapses.

The different classes of antidepressants used alone and in combination included Atypical antidepressants, Serotonin and noradrenaline reuptake inhibitors (SNRIs), Selective serotonin reuptake inhibitors (SSRIs) and Tricyclic antidepressants (TCAs).

Selective serotonin reuptake inhibitors (SSRIs) and serotonin–norepinephrine reuptake inhibitors (SNRIs) are first-line pharmacological treatments for people with Major Depressive Disorder (MDD).[2]However, SSRIs and SNRIs are associated with a range of side effects, including loss of appetite, weight loss, drowsiness, dizziness, fatigue, headaches, increased suicidal thoughts, nausea/vomiting, sexual dysfunction, and increased risk of cardiovascular and cerebrovascular events.[3-5]

Although some side effects of antidepressants are idiosyncratic, most can be explained by their effects at the synaptic level.Antidepressants typically block the reuptake of certain neurotransmitters (norepinephrine, serotonin, and dopamine) back into the nerve ending and block some of the other neurotransmitter receptors.[6-9]

Monoamine oxidase inhibitors are effective antidepressants, but dietary restrictions and the risk of hypertensive crises limit their use.Tricyclic antidepressants were introduced shortly after monoamine oxidase inhibitors. They were the drugs of choice for depression in the

1980s, but they are not as widely used now because less toxic and more selective medications are available.These medications block reuptake of norepinephrine and serotonin. They are also competitive antagonists at the muscarinic, histaminergic, and alpha 1 and 2 adrenergic receptors, which results in their characteristic side effect profile.[7]

Education and reassurance of patients about adverse effects will enhance compliance and improve treatment outcome. Providing patients with contact information might decrease their anxiety and help in reporting any adverse event. It is also very helpful to provide patients with literature explaining the potential adverse effects. Patients should be encouraged to contact their provider about any troublesome adverse effect that does not resolve.

II. MATERIALS AND METHODS

This was an observational cross-sectional study. The sampling technique was purposive in nature. The data was collected for a period of 2 years from 1st November 2015 to 30th October 2017. The study was carried out in the Department of Pharmacology and Psychiatry, Hi-Tech Medical College and Hospital, Bhubaneswar, India after obtaining necessary approval by the institutional ethics committee. A total of 262 consenting patients attending Psychiatry OPD of Hi-Tech Medical College and Hospital, Bhubaneswar with clinical diagnosis of Major Depressive Disorder (MDD) without any co-morbid diagnosis being treated with one or a combination of antidepressant class of medication were included in the study. The patients were divided into 10 groups depending upon the therapy they were given. These included patients being treated with single drug therapy of SNRIs, SSRIs, TCAs; two combination therapy of Atypical + SSRIs, SNRIs + SSRIs, SSRIs + TCAs, TCAs + SNRIs and three combination therapy of SSRIs + SNRIs + Atypical, SSRIs + SNRIs + TCAs and SSRIs + TCAs + Atypical. The adverse effects associated with the different therapy options were collected by interviewing the patient and through clinical monitoring based on the Anti-depressant Side Effect Checklist (ASEC) and are discussed and analyzed.

III. RESULTS AND DISCUSSION

Weight gain was a common occurring adverse effect associated with few of the therapy options. It occurred a total of 99 times of the 262 cases. SSRIs + TCAs combination accounted for 29.3% cases; Atypical + SSRIs combination accounted for 24.2% cases. TCAs use was found to be associated with weight gain; individual use of TCAs led to weight gain and accounted for 12.1% cases.

Dry mouth was another common adverse effect and it occurred in a total of 60 cases of the 262. Atypical + SSRIs and SSRIs + TCAs combination both accounted for 25% cases of dry mouth each; 18.3% cases of dry mouth was associated with SNRIs + SSRIs use while TCAs use alone comprised 13.3% of cases.

Tremor was an adverse effect that occurred in 22.1% of the total cases. SSRIs + TCAs combination accounted for 43.1% cases of tremor while TCAs use alone accounted for 23.4% cases. TCAs + SNRIs combination accounted for 19% cases of tremor. It was seen that this adverse effect tremor was closely linked to use of TCAs whether alone or in combination with other classes of antidepressant medication.

Sexual dysfunction was an adverse effect which was seen in 15.2% of the total cases; SNRIs + SSRIs, SSRIs alone and SSRIs + TCAs accounted for 35%, 27.5% and 25% of the total cases of sexual dysfunction respectively. It was seen that sexual dysfunction as an adverse effect was more associated with the use of SSRIs and also to some extent SNRIs class of drugs. 5% of the cases of sexual dysfunction were also associated with the use of Atypical + SSRIs combination therapy.

It was seen that use of multiple combination therapy of antidepressant drugs from different classes which is often required led to a greater constellation of occurrence of adverse effects. The adverse effects that occurred most were weight gain, dry mouth and tremor.

IV. CONCLUSION

A wide variety of individual drugs belonging to the different classes of antidepressants are now readily available and used. It is clear that no class of antidepressants is completely free from adverse effects. There is also considerable individual variation on how different patients react to different classes of antidepressants, adverse effects of a particular class of antidepressant may be mild in some whilst they may be distressing in others. Adverse effects of antidepressant drugs can decrease compliance and delay recovery. More than one class of antidepressant may be effective in treating Major Depressive Disorder (MDD) in different patients, it is therefore crucial to consider potential side effects when choosing an antidepressant. Further research and studies need to be conducted focussing on the adverse effects of antidepressants, with the goal of helping physicians

to recognize and understand them, so that patients can undergo effective treatment.

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