International Journal for Multidisciplinary Research (IJFMR)
E-ISSN: 2582-2160 ● Website: www.ijfmr.com ● Email: editor@ijfmr.com

Psychiatric Comorbidities in Patients with Alcohol Use Disorder

Rose Haba[1], Arun Chandran Ramachandran[2]

[1]PharmD PB, Department of Pharmacy Practice, Acharya and BM Reddy College of Pharmacy
[2]PharmD, Department of Pharmacy Practice, Acharya and BM Reddy College of Pharmacy

Abstract

Alcohol Use Disorder (AUD) represents a major public health problem that has been increasing in India and all over the world. Alcohol users have a three-fold increased risk of developing another psychiatric disorder. Hence, the purpose of this study was to assess the magnitude of psychiatric comorbidities in patients with AUD and to describe the prescription pattern of drugs used in their management. The prevalence of Depression and Generalized Anxiety Disorder (GAD) among AUD patients was respectively found to be 37.01% and 32.20% considering from mild to severe level of disorder. A significant association was found between AUD patients diagnosed with Depression and those diagnosed with GAD with p-value significant at <0.05, where 30.79% of patients were having both Depression and GAD. From the treatment view, Selective Serotonin Reuptake Inhibitors (SSRIs) especially Escitalopram made up 94.44% of antidepressants used to treat depressive AUD patients. Lorazepam (47.5%) was the most prescribed benzodiazepine drug used to treat AUD patients with GAD. From this study, it is evident that psychiatric comorbidities are common in patients diagnosed with AUD. Therefore, a thorough assessment of the mental health of such patients is necessary. A proper treatment strategy should be planned and implemented to provide an effective treatment care to AUD patients alone and to those experiencing any other psychiatric comorbidities at the same time, thereby promoting better health outcomes and preventing alcohol relapse and withdrawal.

Keywords: Alcohol Use Disorder, Depression, Generalized Anxiety Disorder

1. Introduction

Drinking alcohol has been a common practice throughout history, its usage patterns, socioeconomic effects, and health effects have significantly changed over the years [1]. Binge or heavy consumption of alcohol can cause gradual changes in the way that human's brain develops and works over time. The move from moderate and/or infrequent use to chronic use of alcohol can be challenging to regulate and usually results in Alcohol Use Disorder (AUD) [2]. Psychiatric comorbidity is common in patients with AUD, and it has been demonstrated to be a significant factor in relapse and management issues; it is thereby well observed that substance misuse and mental illness frequently coexist and according to statistics, alcohol users have a three-fold increased risk of developing another psychiatric disorder [3-5]. Numerous investigations conducted over the past 30 years have revealed that AUD frequently co-occurs with particular mood and anxiety problems. The National Comorbidity Survey (NCS) discovered in 1997 that anxiety disorders were two to three times more common among drinkers than in non-alcoholics; the National Longitudinal Alcohol Epidemiologic Survey by the National Institute on

Alcohol Abuse and Alcoholism (NIAAA) also discovered that people with a history of alcohol dependency had more than fourfold higher chance of experiencing a major depressive episode than people without such a history [6]. Studies have found that out of two billion alcohol consumers globally, 76.3 million (7.63%) have at least one extra disorder brought on by their habits and/or due to a number of factors [7].

According to research, either in clinical populations or in the general population, between 45% and 80% of alcoholics have another psychiatric condition and among them, 54% of Alcohol Dependence Syndrome (ADS) patients had extra psychopathology, 35% had one, 10% had two, and 55% had three or more psychiatric comorbid diagnoses [8,9].

Depression is one of the most common psychiatric comorbidities among AUD patients and the prevalence of depression in people with AUD is found to be 35% and up to 40% of people with major depressive disorder have alcohol use disorders throughout their lives. A larger probability of delayed diagnosis and more serious psychopathological symptoms are present when these two illnesses coexist. The effectiveness of the treatment is significantly reduced, and treatment adherence declines. Social functioning has been significantly impaired and the incidence of suicide ideation is higher increasing admissions to emergency department [10-13, 14-17].

GAD and AUD also co-occur more frequently and are characterized by a complicated clinical appearance. The frequency of anxiety disorders in those with AUD is estimated to be as high as 33% and it was found that between 8.3% and 56.2% of inpatient alcoholics, 22.9% met the criteria for GAD [18,19].

In India, research has been done on the antidepressant prescription trend and the most frequently prescribed antidepressant in both depression and anxiety was escitalopram. According to a multicenter study that sought to identify prescription patterns for antidepressants in India, Selective Serotonin Reuptake Inhibitors (SSRIs) made up 79.2% of all the prescriptions [20-22].

For the treatment of co-occurring AUD and depression, combinations of antidepressants and AUD drugs such as sertraline with naltrexone and acamprosate with escitalopram have also shown some promise, with favourable results for both AUD and depressive symptoms [23].

SSRIs, Serotonin Norepinephrine Reuptake Inhibitors (SNRIs), tricyclic antidepressants, buspirone, beta-blockers, gabapentinoids, atypical antipsychotics such as quetiapine, and benzodiazepines are among the drugs that are commonly prescribed to treat anxiety disorders. The Food Drug Administration (FDA) has approved the use of benzodiazepines for GAD, and they have a treatment response efficacy rate of over 80% but the use of these benzodiazepines should be limited to four weeks due to their potential for abuse whereas on the other hand, Pregabalin was also found to be the most acceptable drug out of the FDA-approved treatments for GAD [24].

Short-term usage of chlordiazepoxide is another possible benzodiazepine medication for patients with concurrent anxiety and alcohol withdrawal symptoms, which is useful for reducing anxiety, agitation, trembling, and seizure frequency experienced during mild to moderate alcohol withdrawal [25].

According to the available evidences, alcohol has a great proportion of substance use along with at least one co-occuring psychiatric comorbidity, whose managements are significantly challenging. Screening of both depression and GAD in patients with AUD is essential for the appropriate management of these diagnosed co-morbid in individual patient. Hence, this study was done to assess the magnitude of Depression and GAD among patients diagnosed with AUD and to describe the prescription pattern of drugs used in the management of Depression and GAD in patients diagnosed with AUD.

2. Material and Methods

This was a six (6) months cross-sectional study carried out in the Department of Psychiatry of Employees' State Insurance Corporation Medical College, PGIMSR & Model Hospital, Bengaluru, India. A total of 159 patients diagnosed with AUD and willing to participate were selected for the study. The study was approved by the Ethic Committee of Employees' State Insurance Corporation Medical College, PGIMSR & Model Hospital, Bengaluru, India in accordance with the guideline issued by ICMR (No. 532/L/11/12/Ethics/ESICMC&PGIMSR/Estt.Vol…IV).

Inclusion criteria:

Patients meeting F10 of ICD-10 Diagnostic Criteria for AUD.

Patients of any gender between 18 and 55 years of age.

Exclusion criteria:

Subjects with history of other substance abuse.

Study tools:

Informed Consent form

Self-structured demographic proforma

PHQ-9 for measuring Depression

GAD-7 for measuring Anxiety

Self-designed patient medication profile form

Study procedure:

Subjects for the study were identified by the investigators from both inpatient and outpatient ward during their visit to the hospital based on the inclusion and exclusion criteria. The participants were explained the purpose of the study and assessed only after obtention of their consent. Patients not willing to participate were not included in the study. Relevant data was recorded from the data collection form. The subjects were administered with other tools of the study including PHQ-9 and GAD-7 to obtain relevant information on depression and GAD. In instances where patients were readmitted during the study period, data from the first admission were only collected.

Statistical analysis

All obtained and recorded data were entered into MS Excel software and analyzed by using descriptive statistics and inferential statistics. Chi-square test was performed to find out whether there is an association in the magnitude of depression and GAD in patients diagnosed with AUD.

3. Results

Distribution of patients according to gender is kept in table 1, which shows that the majority of patients with AUD in the current study was found to be male.

Table 1: Distribution of Patients According to Gender.

Gender	No. of patients	Percentage
Male	158	99.37
Female	1	0.63
Total	159	100.00

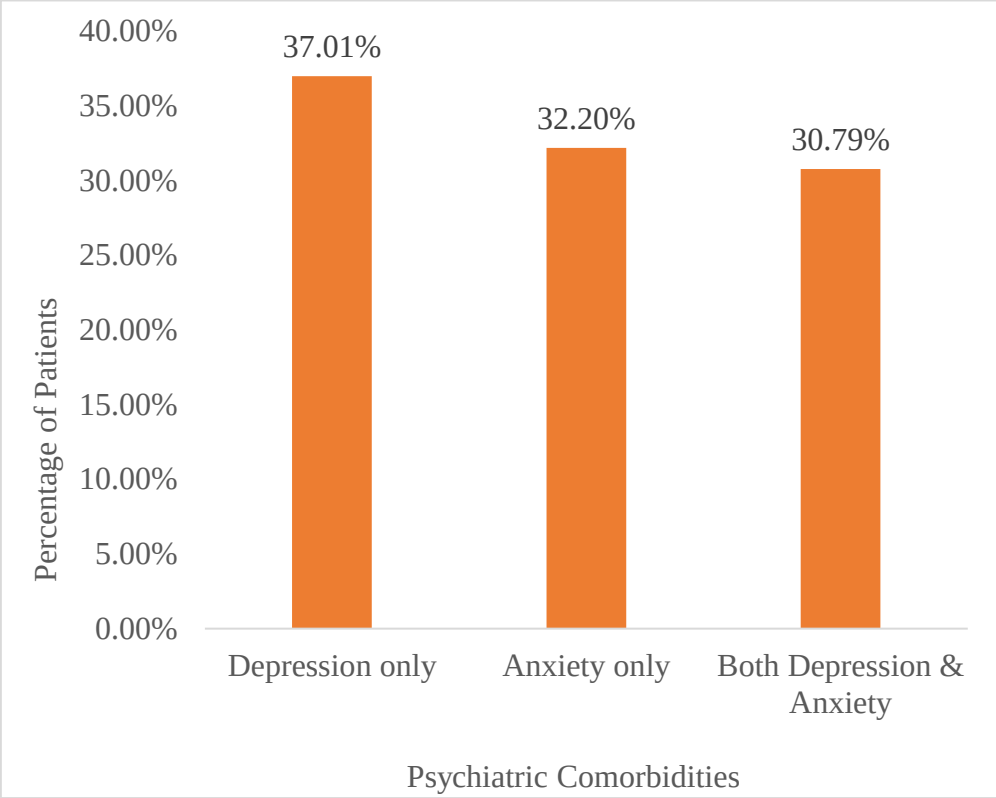
The magnitude (prevalence) of psychiatric comorbidity among AUD patients under the study is shown in table 2 and illustrated with the figure 1.

Table 2: Distribution of AUD Patients with Psychiatric Comorbidities.

Type of psychiatric disorder	No. patients	Percentage
Depression only	131	37.01
GAD only	114	32.20
Depression and GAD	109	30.79

The above data (Table 2), is pictured in the next graph (Figure 1).

Figure 1: Distribution of AUD Patients with Psychiatric Comorbidities.



A number of AUD patients found to have Depression was also having GAD, which will be given in table 3 and graphically illustrated in Figure 2 accompanied by the result of statistical test given in the table 4, in which a significant association was found between AUD patients diagnosed with Depression and those diagnosed with GAD.

Table 3: Distribution of AUD Patients with Depression in Association with GAD.

Depression level (PHQ-9)	GAD Level (GAD-7)			Total
	None to Minimal	Mild	Moderate to Severe	
None to Minimal	23	2	1	28
Mild to Moderate	20	55	27	102
Moderately severe to Severe	2	4	23	29
Total	45	63	51	159

Figure 2: Distribution of AUD Patients with Depression in Association with GAD.

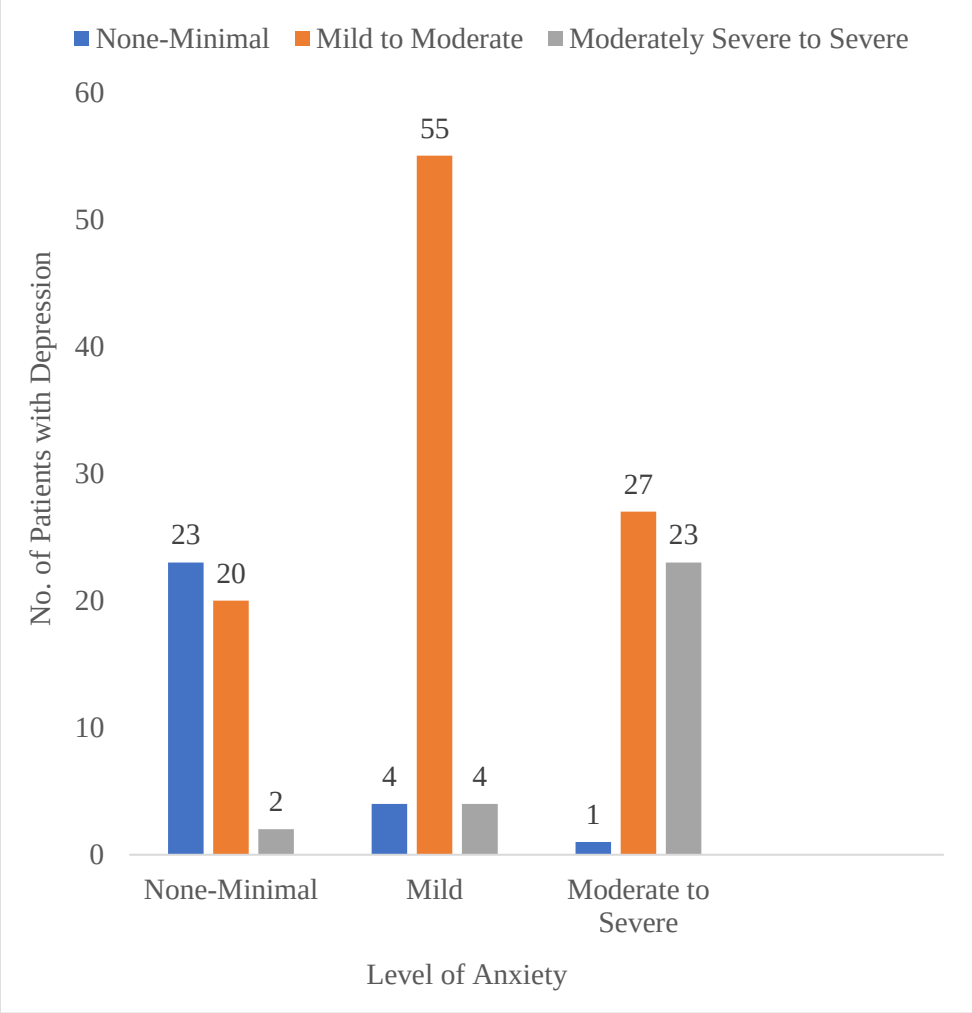


Table 4: Statistical Test's Result Relating Association Between AUD Patients with Depression and Those with GAD.

Depression level (PHQ-9)	GAD Level (GAD-7)			Chi-square test	p-value
	None to Minimal	Mild	Moderate to Severe		
None to Minimal	23	2	1	79.04	2.775×10^{-16}
Mild to Moderate	20	55	27		
Moderately severe to Severe	2	4	23		
Total	45	63	51		

The antidepressants medications used to treat AUD patients with depression in this study are shown in table 5.

Table 5: Distribution of AUD Patients with Depression Receiving Anti-Depressants.

Prescribed drug	No. of patients	Percentage
Escitalopram	17	94.44

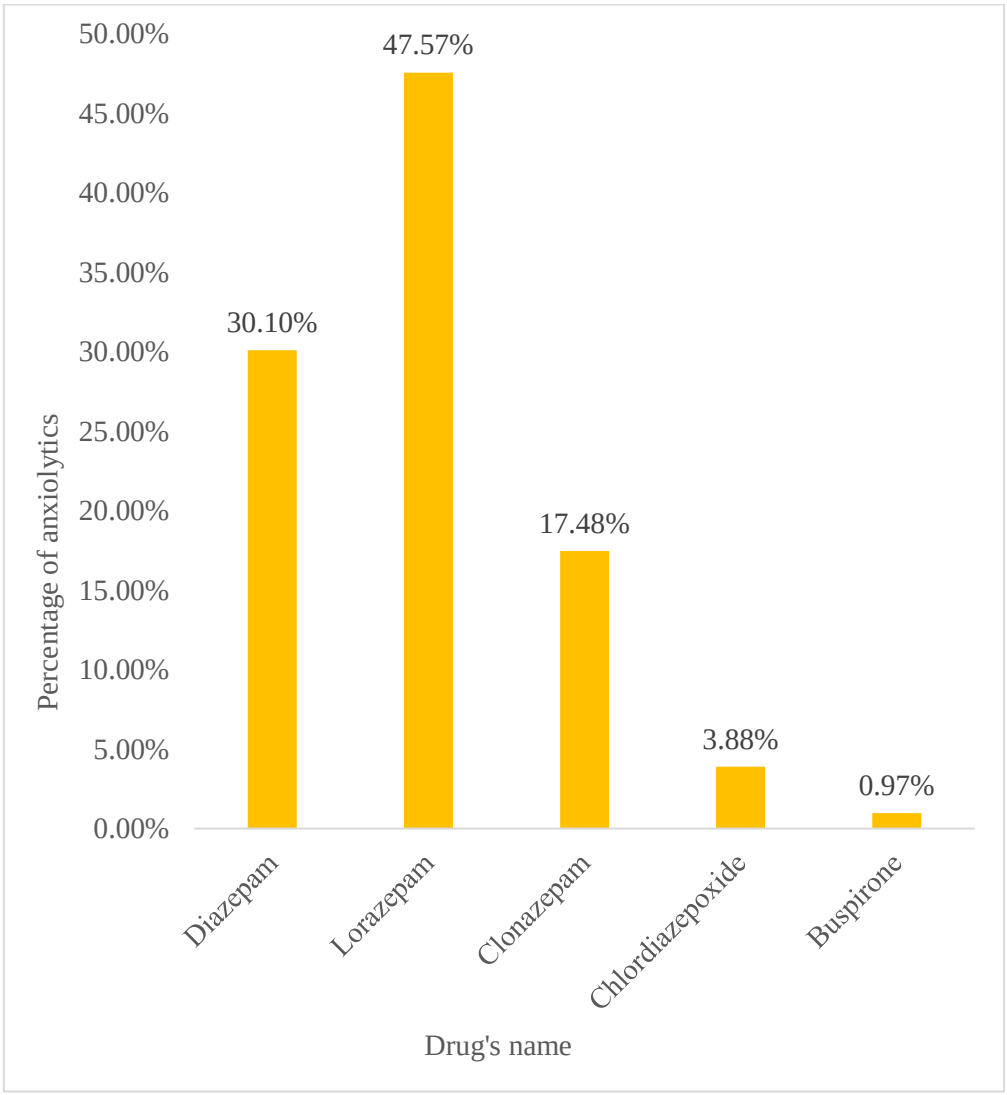
Desvenlafaxine	1	5.56
Total	18	100.00

The result presented in table 6 summarizes the anxiolytics drugs used to treat AUD patients with GAD.

Table 6: Distribution of AUD Patients with GAD Receiving Anxiolytics.

Prescribed drug	No. of patients	Percentage
Diazepam	31	30.10
Lorazepam	49	47.57
Clonazepam	18	17.48
Chlordiazepoxide	4	3.88
Buspirone	1	0.97
Total	103	100.00

Figure 3: Distribution of AUD Patients with GAD Receiving Anxiolytics.

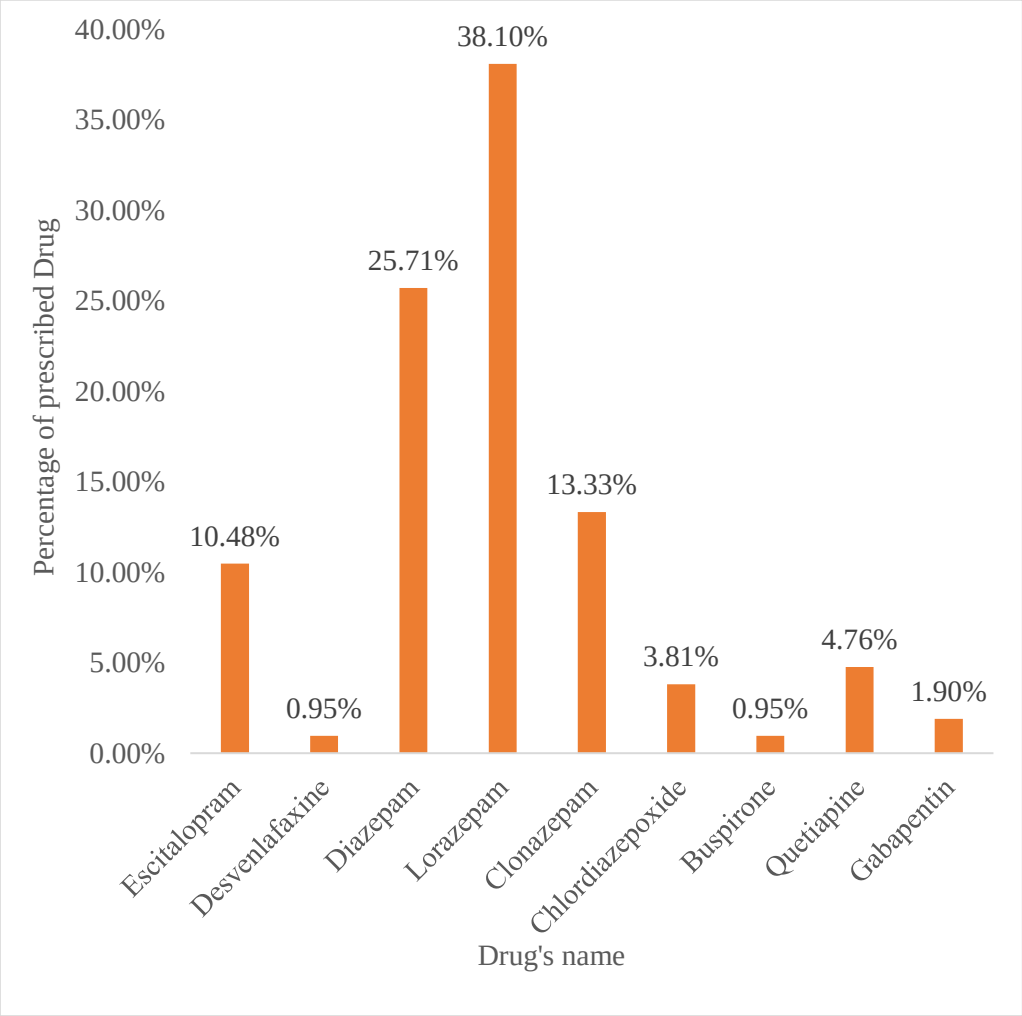


The following final results and figure revealed the percentage of drug given to AUD patients having both depression and GAD.

Table 7: Distribution of AUD Patients with Both Depression & GAD Receiving Antidepressants & Anxiolytics.

Prescribed Drug	No. of Patients	Percentage
Escitalopram	11	10.48
Desvenlafaxine	1	0.95
Diazepam	27	25.71
Lorazepam	40	38.10
Clonazepam	14	13.33
Chlordiazepoxide	4	3.81
Buspirone	1	0.95
Quetiapine	5	4.76
Gabapentin	2	1.90
Total	105	100.00

Figure 4: Distribution of AUD Patients with Both Depression & GAD Receiving Antidepressants & Anxiolytics.



4. Discussion

The actual research study was done to assess the magnitude of psychiatric comorbidities in patients with AUD and to describe the prescription pattern of drugs used in their management. It was identified that among the AUD patients, who gave consent to participate in the study, the majority of them were males and only a single patient was female (table 1). This was also reported by previous studies, which found that a large number of males are diagnosed with AUD than female [26,27]. The result so obtained can be a confirmation of men having more AUD cases than women.

Among the selected patients with AUD and considering only from mild to severe level, the most prevalent psychiatric co-morbidity among them was found to be Depression followed by GAD with a prevalence rate of 37.01% and 32.2% respectively (table 2). Many research studies have highlighted the occurrence of common mental disorders in AUD patients with most common co-occuring comorbid disorder being depression and anxiety [28]. The current research work's results bring more evidences that patients with AUD are more likely to develop and experience another psychiatric disorder making their condition more difficult to manage.

Furthermore, Chi-square test was performed in the present study to find out whether there is an association between AUD patients with Depression and those with GAD (table 3). A significant association between AUD patients with Depression and those with GAD was reported considering p-value significant at <0.05 with $p=2.775 \times 10^{-16}$ (table 4) and 30.79% of AUD patients were found to be having both Depression and GAD (figure 1). The result reported from the actual study again provides additional evidence to the occurrence of psychiatric disorders in patients, that are already being diagnosed with AUD.

Among the selected 159 AUD patients, 131 patients responded for Depression only (table 2), in which 18 patients were receiving anti-depressants (table 5). SSRIs especially Escitalopram made up 94.44% of anti-depressants drug prescription followed by Serotonin and Norepinephrine Reuptake Inhibitors (SNRIs, Desvenlafaxine) that made up 5.36% of anti-depressants used.

According to a multicenter study that sought to identify prescription patterns for antidepressants in India, SSRIs made up 79.2% of all the prescriptions [21-23]. This shows that the results of the current research paper are in agreement with many published research that also demonstrate the same.

Out of the selected AUD patients, 114 of them responded for GAD among which 103 were receiving anxiolytics (table 6), where 99.93 % of benzodiazepines were used with most prescribed drug being Lorazepam (47.5%) followed by Diazepam (30.10%), Clonazepam (17.48%) then Chlordiazepoxide (3.88%) and an Azapirone (Buspirone, 0.97%). The Food Drug Administration (FDA) has approved the use of benzodiazepines for GAD, which have a treatment response efficacy rate of over 80% but the use of these benzodiazepines should be limited to four weeks due to their potential for abuse [25,26]. The result obtained here shows a high use of benzodiazepine in patients with AUD having GAD and matches FDA report on the use of benzodiazepine for the treatment of GAD.

Along with these results, 109 AUD patients were found to be having both Depression and GAD, where 11 patients were receiving Escitalopram (10.48%), 1 patient was receiving Desvenlafaxine (0.95%), 27 patients were receiving Diazepam (25.71%), 40 patients were receiving Lorazepam (38.10%), 14 patients were receiving Clonazepam (13.33%), 4 patients were receiving Chlordiazepoxide (3.81%), 5 patients were receiving atypical antipsychotic (Quetiapine, 4.76%) and 2 patients received gabapentin (1.90%) (table 7).

The whole above results and data shows a poor treatment of AUD patients with another psychiatric

disorder. Despites the large number of AUD patients with an additional psychiatric disorder, only very few patients are being treated and the majority are left without additional treatments.

All the discussed literatures and results obtained in the present study revealed the lack of proper assessment of AUD patients with another mental disorder. We can thereby conclude from these results that AUD patients are more likely to develop another psychiatric comorbidity, which usually affect the management of their actual condition and a delay in the diagnostic of a possible additional psychiatric comorbidity worsen their known case of AUD. As non-pharmacological treatment, counselling was done for almost all patients diagnosed with AUD.

5. Conclusion

In conclusion, AUD occurs more frequently in males, who have a high risk of developing any other psychiatric co-morbidities such as depression, anxiety. The results of the present study show an extremely low use of antidepressants in AUD patients with Depression, which reveals a poor treatment of AUD patients with Depression. On the other side, more AUD patients with GAD were at least receiving one anxiolytic; still few were not receiving an anxiolytic. In nutshell, along with the counselling commonly done to patients diagnosed with AUD, a thorough screening of common mental disorders among those patients should be done. This will help to re-enforce the care provided to them and obtain a better treatment outcome in order to prevent relapse and improve their quality of life.

6. Acknowledgement

This research work was conducted in ESIC MC, PGIMSR & MH, Bengaluru, India after approval from Institutional Ethic Committee. We thank the Department of Psychiatry for allowing us for the successful conduct of this project work. We also express our gratitude to all the teaching and non-teaching staff of Acharya & BM Reddy College of Pharmacy, Bengaluru, India for their constant support and contributions throughout the completion of this research paper.

References

1. Murthy P, Manjunatha N, Subodh BN, Chand PK, Benegal V. Substance use and addiction research in India. Indian J Psychiatry. 2010 Jan; 52(Suppl 1): S189-99. https://doi.org/10.4103/0019-5545.69232
2. Crews FT, Vetreno RP, Broadwater MA, Robinson DL. Adolescent Alcohol Exposure Persistently Impacts Adult Neurobiology and Behavior. Pharmacol Rev. 2016 Oct; 68(4): 1074-1109. https://doi.org/10.1124/pr.115.012138
3. Heramani Singh N, Sharma SG, Pasweth AM. Psychiatric co-morbidity among alcohol dependants. Indian J Psychiatry. 2005 Oct; 47(4): 222-4. https://doi.org/10.4103/0019-5545.43058
4. Vohra AK, Yadav BS, Khurana H. A study of psychiatric comorbidity in alcohol dependence. Indian J Psychiatry. 2003 Oct; 45(4): 247-250.
5. Rounsaville BJ, Dolinsky ZS, Babor TF, Meyer RE. Psychopathology as a predictor of treatment outcome in alcoholics. Arch Gen Psychiatry. 1987 Jun; 44(6): 505-13. https://doi.org/10.1001/archpsyc.1987.01800180015002
6. Anthenelli RM. Focus on: Comorbid mental health disorders. Alcohol Res Health. 2010; 33(1-2): 109-117.
7. Donadon MF, Osório FL. Personality traits and psychiatric comorbidities in alcohol dependence.

Braz J Med Biol Res. 2016 Jan; 49(1): e5036. https://doi.org/10.1590/1414-431X20155036
8. Herz LR, Volicer L, D'Angelo N, Gadish D. Additional psychiatric illness by Diagnostic Interview Schedule in male alcoholics. Compr Psychiatry. 1990 Jan-Feb;31(1):72-9. https://doi.org/10.1016/0010-440x(90)90056-x
9. Weiss KJ, Rosenberg DJ. Prevalence of anxiety disorder among alcoholics. J Clin Psychiatry. 1985 Jan; 46(1): 3-5.
10. Chhetri B, Dem U, Tshering K, Skodlar B. Prevalence of major depressive disorder in adult patients with alcohol use disorder admitted in the psychiatric ward at the Jigme Dorji Wangchuck National Referral Hospital, Thimphu, Bhutan. Population Medicine. 2023 May 25; 5(May): 1-8. https://doi.org/10.18332/popmed/166187
11. Greenfield SF, Weiss RD, Muenz LR, Vagge LM, Kelly JF, Bello LR, Michael J. The effect of depression on return to drinking: a prospective study. Arch Gen Psychiatry. 1998 Mar; 55(3): 259-65. https://doi.org/10.1001/archpsyc.55.3.259
12. Becker A, Ehret AM, Kirsch P. From the neurobiological basis of comorbid alcohol dependence and depression to psychological treatment strategies: study protocol of a randomized controlled trial. BMC Psychiatry. 2017 Apr 28; 17(1): 153. https://doi.org/10.1186/s12888-017-1324-0
13. Riper H, Andersson G, Hunter SB, de Wit J, Berking M, Cuijpers P. Treatment of comorbid alcohol use disorders and depression with cognitive-behavioural therapy and motivational interviewing: a meta-analysis. Addiction. 2014 Mar; 109(3): 394-406. https://doi.org//10.1111/add.12441
14. Chhetri B, Dem U, Tshering K, Skodlar B. Prevalence of major depressive disorder in adult patients with alcohol use disorder admitted in the psychiatric ward at the Jigme Dorji Wangchuck National Referral Hospital, Thimphu, Bhutan. Population Medicine. 2023 May 25; 5(May): 1-8. https://doi.org/10.18332/popmed/166187
15. Stephen Rich J, Martin PR. Co-occurring psychiatric disorders and alcoholism. Handb Clin Neurol. 2014; 125: 573-88. https://doi.org/10.1016/B978-0-444-62619-6.00033-1
16. Balhara YPS, Gupta P, Elwadhi D. Co-occurring depression and alcohol-use disorders in South-East Asia: A narrative review. WHO South East Asia J Public Health. 2017 Apr; 6(1): 50-59. https://doi.org/10.4103/2224-3151.206166
17. Pavkovic B, Zaric M, Markovic M, Klacar M, Huljic A, Caricic A. Double screening for dual disorder, alcoholism and depression. Psychiatry Res. 2018 Dec; 270: 483-489. https://doi.org/10.1016/j.psychres.2018.10.013
18. Tollefson GD, Montague-Clouse J, Tollefson SL. Treatment of comorbid generalized anxiety in a recently detoxified alcoholic population with a selective serotonergic drug (buspirone). J Clin Psychopharmacol. 1992 Feb; 12(1): 19-26. https://doi.org/10.1097/00001573-199202000-00004
19. Smith JP, Book SW. Comorbidity of generalized anxiety disorder and alcohol use disorders among individuals seeking outpatient substance abuse treatment. Addict Behav. 2010 Jan; 35(1): 42-45. https://doi.org/10.1016/j.addbeh.2009.07.002
20. Grover S, Kumar V, Avasthi A, Kulhara P. An audit of first prescription of new patients attending a psychiatry walk-in-clinic in north India. Indian J Pharmacol. 2012 May; 44(3): 319-25. https://doi.org/10.4103/0253-7613.96302
21. Tripathi A, Avasthi A, Desousa A, Bhagabati D, Shah N, Kallivayalil RA, Grover S, Trivedi JK, Shinfuku N. Prescription pattern of antidepressants in five tertiary care psychiatric centres of India. Indian J Med Res. 2016 Apr; 143(4): 507-13. https://doi.org/10.4103/0971-5916.184289

22. Chakrabarti S, Kulhara P. Patterns of antidepressant prescriptions: I acute phase treatments. Indian J Psychiatry. 2000 Jan; 42(1): 21-8.
23. McHugh RK, Weiss RD. Alcohol Use Disorder and Depressive Disorders. Alcohol Res. 2019 Jan 1; 40(1): arcr.v40.1.01. https://doi.org/10.35946/arcr.v40.1.01
24. Bystritsky A. Treatment-resistant anxiety disorders. Mol Psychiatry. 2006 Sep; 11(9): 805-814. https://doi.org/10.1038/sj.mp.4001852
25. Sachdeva A, Choudhary M, Chandra M. Alcohol Withdrawal Syndrome: Benzodiazepines and Beyond. J Clin Diagn Res. 2015 Sep; 9(9): VE01-VE07. https://doi.org/10.7860/JCDR/2015/13407.6538
26. Ravikanth T, Sultan S. The prevalence of psychiatric comorbidity and its relationship to the severity of alcohol dependence in the population of rural south India. Middle East Curr Psychiatry 27, 1 (2020). https://doi.org/10.1186/s43045-019-0010-y
27. Gedam SR, Dhabarde A, Patil PS, Sharma A, Kumar K, Babar V. Psychiatric Comorbidity, Severity of Dependence and Liver Enzymes Dysfunction among Alcohol Dependent Individuals: A Cross-sectional Study from Central Rural India. Journal of Clinical & Diagnostic Research. 2019 Apr 1; 13(4). https://doi.org/10.7860/JCDR/2019/40368.12759
28. Castillo-Carniglia A, Keyes KM, Hasin DS, Cerdá M. Psychiatric comorbidities in alcohol use disorder. Lancet Psychiatry. 2019 Dec; 6(12): 1068-1080. https://doi.org/10.1016/S2215-0366(19)30222-6