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A Prospective Observational Study on Prescribing Pattern of Drugs in Alcohol Dependence

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ABSTRACT:

BACKGROUND: Alcohol dependence is defined as "a cluster of behavioral, cognitive, and physiological phenomena that develop after repeated substance use and that typically include a strong desire to take the drug. Alcohol related disorders cause variety of social problems like road accidents, crimes, domestic violence, debts, poor performance and suicides. This study was done to observe the prescribing pattern of drugs used in alcohol dependence.
METHODOLOGY: A prospective observational study was conducted in the department of psychiatry for a period of 3 months. 80 patients of alcohol dependent were collected using a pre-designed case sheet.
RESULTS: In this study 80 patients suffering from alcohol dependence were analyzed. All the patients observed were male, highest number of patients was observed in the age group of 40-45 years (31.25 %). 50 % patients were treated for only alcohol dependence with benzodiazepines (34 %), anti- craving drugs (30 %), vitamins (21 %). 41 % were treated for both alcohol and nicotine dependence with nicotine gum and 9 % were treated for alcohol dependence and bipolar disorder with antidepressants (69.7 %) and anti psychotics (30.3 %). Among anti craving drugs, mostly prescribed drug was baclofen (92.3 %). Benzodiazepines like chlordiazepoxide (79 %) was most commonly prescribed.
CONCLUSION: In this study we found that mostly middle aged males were diagnosed with alcohol dependence. It was observed that alcohol and nicotine dependence co-exist which may lead to early deterioration of social and physiological function. Bipolar disorder was the other co-morbidity noted in alcohol dependence. Benzodiazepines, anti craving drugs are mostly prescribed in alcohol dependence. Anti depressants and anti psychotics were prescribed for bipolar disorder. Nicotine gum was prescribed for nicotine dependence.

Keywords: Alcohol dependence, Benzodiazepines, Anti craving drugs.

INTRODUCTION:

According to ICD-10 Alcohol dependence is defined as "a cluster of behavioral, cognitive, and physiological phenomena that develop after repeated substance use and that typically include a strong desire to take the drug, difficulties in controlling its use, persisting in its use despite harmful consequences, a higher priority given to drug use than to other activities and obligations, increased tolerance, and sometimes a physical withdrawal state."

Alcohol related disorders cause variety of social problems like road accidents, crime, domestic violence, debts, poor performance and suicides.

Alcohol dependence can cause various diseases like alcoholic fatty liver, cirrhosis, ethanol toxicity and neuropsychiatric diseases like stroke, general anxiety, phobias, panic disorder and schizophrenia. Pattern of drinking by an individual can lead to the individual experiencing different problems–a binge drinker may suffer an acute injury whilst drunk, where as a

chronic drinker may suffer from more long term illness.[1]

Table 1: Alcohol percentage in various beverages.[2]

Alcoholic Beverage	Source	Alcohol Content (%ABV) alcohol by volume	Absolute Alcohol	Standard Drink
Beer (standard)	Cereals	3-4	2.3-3.1	300-400ml
Beer (Strong)	Cereals	8-11	6.2-8.6	100-150ml
Wine	Grapes (and other fruits)	5-13	3.9-10.1	100-250ml
Fortified Wine	Grapes (and other fruits)	14-20	10.9-15.9	60-90ml
Distilled Spirits	Fruits, cereals, sugarcane	40	31.2	30ml
Arrack	Coconut flowers, sugarcane, grain	33	25.7	40ml
Toddy	Palm sap, coconut flowers	5-10	3.9-7.8	200ml
Indian Made Foreign Liquor	Molasses, grain	42.8	33.4	30ml

1.1. International Classification of Diseases (ICD) - 10 Diagnostic guidelines for Alcohol dependence:

A definite diagnosis of dependence should usually be made only if three or more of the following have been present together at some time during the previous year:

a) A strong desire or sense of compulsion to take the substance;
b) Difficulties in controlling substance-taking behavior in terms of its onset, termination, or levels of use;
c) A physiological withdrawal state when substance use has ceased or been reduced, as evidenced by: the characteristic withdrawal syndrome for the substance; or use of the same (or a closely related) substance with the intention of relieving or avoiding withdrawal symptoms;
d) Evidence of tolerance, such that increased doses of the psychoactive substances are required in order to achieve effects originally produced by lower doses (clear examples of this are found in alcohol- and opiate-dependent individuals who may take daily doses sufficient to incapacitate or kill non-tolerant users);
e) Progressive neglect of alternative pleasures or interests because of psychoactive substance use, increased amount of time necessary to obtain or take the substance or to recover from its effects;
f) Persisting with substance use despite clear evidence of overtly harmful consequences, such as harm to the liver through excessive drinking, depressive mood states consequent to periods of heavy substance use, or drug-related impairment of cognitive functioning; efforts should be made to determine that the user was actually, or could be expected to be, aware of the nature and extent of the harm. Narrowing of the personal repertoire of patterns of psychoactive substance use has also been described as a characteristic feature (for example, a tendency to drink alcoholic drinks in the same way on weekdays and weekends, regardless of social constraints that determine appropriate drinking behavior). It is an essential characteristic of the dependence syndrome that either psychoactive substance taking or a desire to take a particular

Volume 2, Issue 5; September-October 2019; Page No.17-23

substance should be present; the subjective awareness of compulsion to use drugs is most commonly seen during attempts to stop or control substance use.[3]

1.2. TREATMENT:

The long-term goals of treatment for patients who drink to excess include abstinence or reduction in use, relapse prevention, and rehabilitation. A phase of 'controlled drinking' is the first step in this process, with a goal to achieve abstinence after a short period of time. The process is more complex in individuals with heavy drinking patterns, in such individuals care should be taken to avoid life threatening complications such as convulsions or delirium tremens.[1]

Medications for treatment of alcohol dependence includes Baclofen (5-20 mg), Acamprosate (333 mg/day), Disulfiram (250-500 mg/day), Naltrexone (50 mg/day), Fluoxetine (20-60 mg/day), Topiramate (25-300 mg/day), Gabapentin (300 mg twice/day), Sertraline (50-200 mg/day).[4]

Table-2: Medications for treatment of Alcohol dependence. [4]

Medication	Dosage	Adverse effects
Acamprosate	Two 333 mg enteric coated tablets three times per day	Diarrhea, insomnia, anxiety, depression, asthenia, dry mouth.
Disulfiram	250 mg/day , may increase to 500 mg/day	Disulfiram-alcohol interaction: flushing, palpitations, nausea, vomiting, headache. Optic neuritis, polyneuritis, hepatitis, impotence, allergic dermatitis.
Naltrexone	50-100 mg/day	Nausea, vomiting, headache, dizziness, nervousness, insomnia, anxiety, joint or muscle pain.
Fluoxetine	20 mg/day , may increase to 60-80 mg/day	Ejaculatory dysfunction, nausea, headache, insomnia, nervousness, anxiety, diarrhea, dry mouth, serotonin syndrome

2. METHODOLOGY:

A prospective observational study was conducted in the department of psychiatry for a period of 3 months. 80 patients of alcohol dependent were collected using a pre-designed case sheet.

Inclusion criteria: all patients with alcohol dependence and with other psychiatric co-morbidities.

Exclusion criteria: patients with other substance abuse disorders.

3. RESULTS:

80 patients of alcohol dependence along with other psychiatric co-morbidities were analyzed and the following results were drawn:

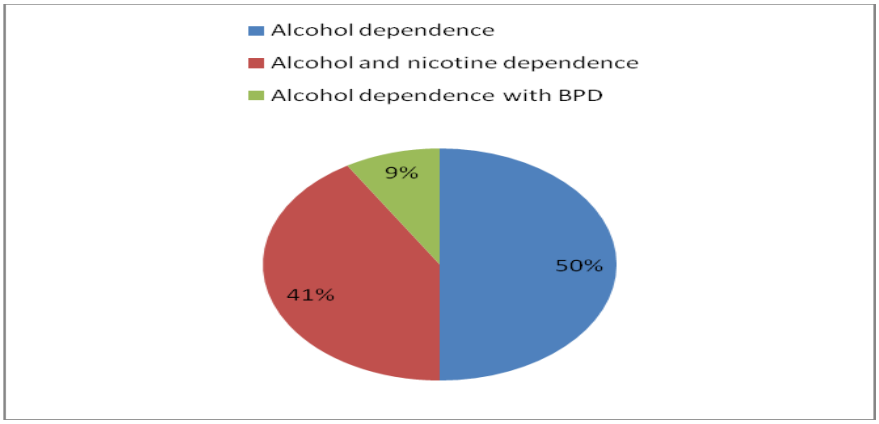
Volume 2, Issue 5; September-October 2019; Page No.17-23

Table 3: Age distribution:

Age group (in years)	No. of patients	%
20-29	9	11.25
30-39	22	27.5
40-49	25	31.25
50-59	12	15
60 & above	12	15

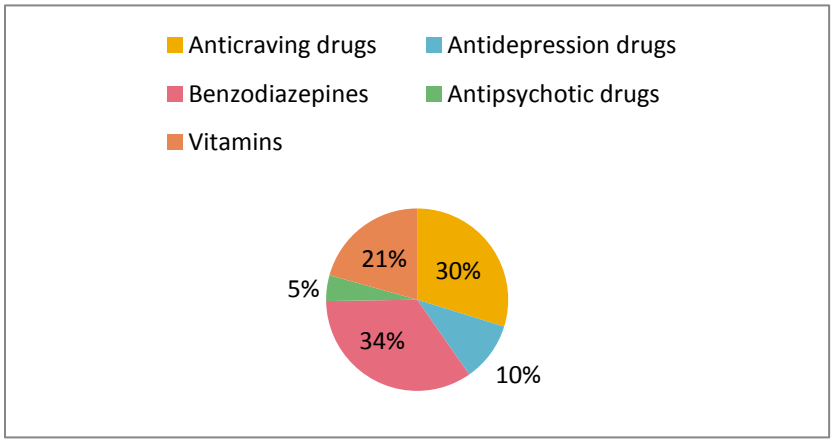
Alcohol dependence was highly observed in the age group of 40-45 years (31.25 %) followed by 30-39 years (27.5 %) and least was found in the age group of 20-29 years (11.25 %). All the patients enrolled were male patients.

Figure 1: Alcohol dependence with psychiatric co-morbidities



50 % of the study population had alcohol dependence alone. Co-exist of nicotine dependence was observed in 41 % of patients and remaining 9 % of population had bipolar disorder as co-morbidity.

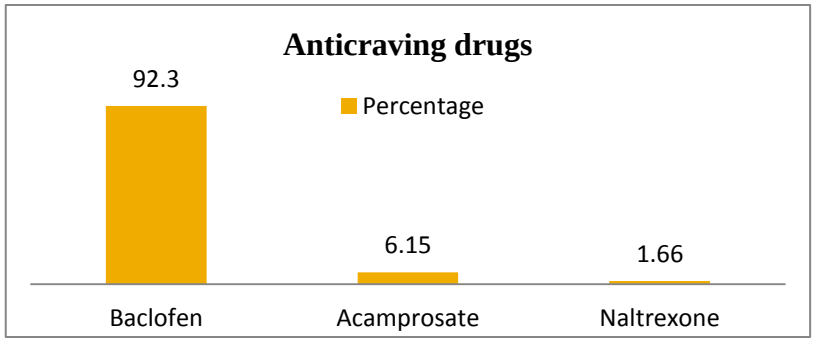
Figure 2: Prescribing pattern of drugs in alcohol dependence



Volume 2, Issue 5; September-October 2019; Page No.17-23

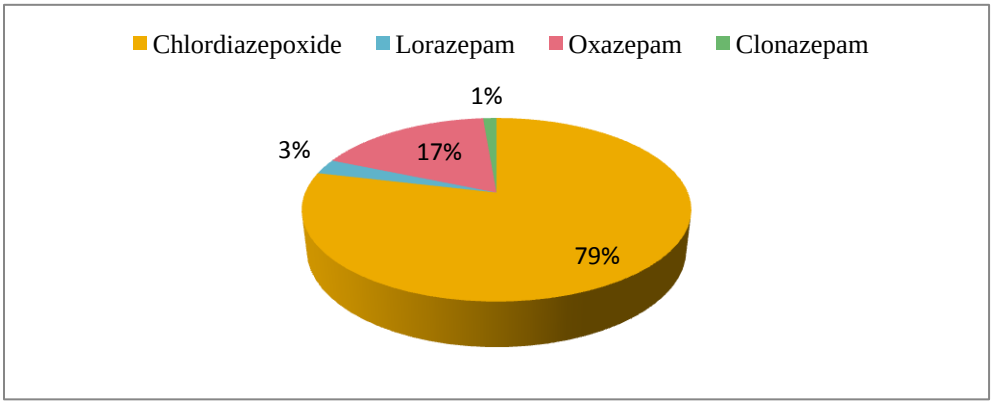
The most commonly prescribed drugs for alcohol dependence were benzodiazepines (34 %), anti craving drugs (30 %), vitamins (21 %) while least includes anti depressants (10 %) and anti psychotic drugs (5 %).

Figure 3: Prescribing pattern of anti craving drugs in alcohol dependence



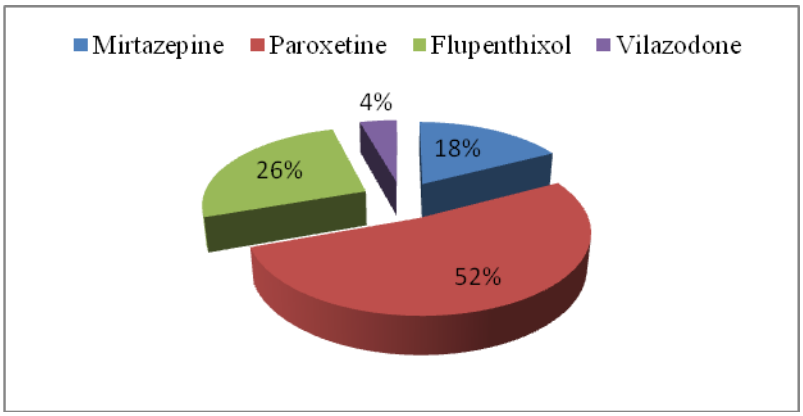
Among anti craving drugs, mostly prescribed drug was baclofen (92.3 %) followed by acamprosate (6.15 %) and naltrexone (1.66 %)

Figure 4: Prescribing pattern of benzodiazepines in alcohol dependence



Benzodiazepines like chlordiazepoxide (79 %) was most commonly prescribed followed by oxazepam (17 %), lorazepam (3 %) and clonazepam (1 %).

Figure 5: Prescribing pattern of anti depressants for BPD in alcohol dependence



Volume 2, Issue 5; September-October 2019; Page No.17-23

Among antidepressants paroxetine (52 %) was highly prescribed followed by flupenthixol (26 %), mirtazapine (26 %) and vilazodone (4 %).

4. DISCUSSSION:

4.1. Age: In this study excess alcohol consumption is noted in the age group of 30-50 years

This is similar to the study conducted by Andrew thopson and Darren M. Ashcroft in UK.[5] The possible reasons included are coping with the work related or financial stress in the middle ages and social influence.[6]

4.2. Gender: Of 80 patients no female patients were enrolled in this study in contrast to the study conducted by Homesh choudary and Kalyani katakam in bangalore where 2 female patients out of 110 study population were enrolled in the study.[7] The reason for women to consume less alcohol in India is culture related.

4.3. Comorbidities: In this study the co-morbidities observed are concurrent nicotine dependence and bipolar disorder with alcohol dependence. Both alcohol and nicotine dependence are observed in 41 % of patients in our study this is approximately equal to the study conducted by Elissa R Weitman *et al.,* in US in which 44-59 % of the drinkers smoke and the co-occurrence risks are high among youth reporting high alcohol consumption.[8]

Alcohol dependence with bipolar disorder is noted in 9 % of population in this study where as in a study conducted by Strakowski SM *et al.,* in cincinnati reported 41 % co-morbitity of bipolar disorder with alcohol dependence. [9]

4.4. Treatment pattern: In current study it was observed that benzodiazepines (34 %) and anti-craving drugs (30 %) and vitamins (21 %) occupy the major part of prescription followed by antidepressants (10%) and antipsychotics (5 %). A similar study was conducted by Upasana dube, Shwetha H *et al.,* in bangalore where vitamins (74.4 %), benzodiazepines (565.8 %), anti-craving drugs (52 %) were mostly prescribed followed by antipsychotics (20 %) and anti depressants (8 %). [10]

Among anti-craving drugs, baclofen was highly prescribed (92.3 %) followed by acamprosate (6.15 %) and naltrexone (1.66 %). A similar study was conducted by Homesh chowdary, Kalyani katakam *et al.,* in Bangalore where baclofen was given in 93.6 % of alcohol dependence patients followed by acamprosate (4.55 %) and naltrexone (1.82 %). [7]

In current study benzodiazepines used for alcohol withdrawal were chlordiazepoxide (79 %), oxazepam (17 %), lorazepam (3 %) and clonazepam (1 %). This is in contrast to the study conducted by Upasana dube, Shwetha H *et al.,* in bangalore where lorazepam (80 %), chlordiazepoxide (16.9 %), diazepam and others (3.6 %). [10]

In this study anti depressants generally prescribed were paroxetine, flupenthixol, mirtazepine and vilazodone. Haloperidol (80 %) and olanzepine (20 %) are the antipsychotics prescribed. In contrast, the study conducted by Upasana dube, Shwetha H *et al*., in bangalore, escitalopram, nortryptilline, amitriptyline and sertraline were used. The antipsychotics prescribed were olanzapine (36 %), haloperidol (28 %), quetiapine (24 %), bupropion (8 %) and risperidone (4 %). [10]

5. CONCLUSION:

Only male patients of middle age suffer from alcohol dependence and the factors contributing are stress and social influence. It was observed that alcohol and nicotine dependence co-exist which may lead to early deterioration of social and physiological function. Bipolar disorder was the other co-morbidity observed in alcohol dependence. Benzodiazepines, anti craving drugs are mostly prescribed in alcohol dependence. Anti depressants and anti psychotics were prescribed for BPD. Nicotine gum was prescribed for nicotine dependence. Therefore a clinical pharmacist play a major role in counselling and therapies like cognitive behavioral therapy in treating alcohol dependence apart from abstinence therapy.

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Volume 2, Issue 5; September-October 2019; Page No.17-23

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Volume 2, Issue 5; September-October 2019; Page No.17-23