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Research Article

Evaluation of Prescription Pattern and Medication Adherence in Patients with Alcoholic Liver Disease

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Abstract

Background: ALD is the most common cause of morbidity and mortality among patients. A patient's Medication Non-Adherence may also interfere with the progression of Disease. Analysis of Prescription pattern in ALD helps to ensure the safety of the Patient by assessing the signs and symptoms of disease and its appropriate therapy. Thus, educating the patients regarding their clinical condition will have a significant role in reducing the severity of the disease. **Aim:** To assess the Prescription pattern, Medication Adherence and to identify the correlation between the medication adherence and the educational status in ALD patients. **Materials and Methods:** The Study was a Prospective Observational study carried out for a duration of Six months. Morisky Green Levine scale was the tool used to assess the medication adherence. Data was collected using a self-designed data collection form. **Results:** A Total of 160 Alcoholic subjects were assessed during the study period among which 65.62% of them were illiterate. Out of total cases 76.87 % of hepatoprotective drugs, 50.62% antiemetics, 38% vitamins and 11% of anti-ulcer drugs were prescribed among patients. It was found that there exist a relationship between educational status and medication adherence (P-value: 0.0021). **Conclusion:** The study helped to assess the different class of drugs, drugs used in different comorbid conditions and also to evaluate, identify and solve the problems associated with the Medication Non-Adherence of the patients.

Keywords: Medication Adherence, Alcoholic Liver Disease, Rational Drug Therapy.

INTRODUCTION:

Alcoholic liver Disease (ALD) which is likewise referred to as Alcohol Related liver Disease (ARLD), is the liver manifestations of alcohol overconsumption which incorporates fatty liver, alcoholic hepatitis and continual hepatitis with fibrosis or cirrhosis ⁽¹⁾. Fatty liver (steatosis), acute alcoholic hepatitis and alcoholic cirrhosis ⁽¹⁾ are the exclusive sorts of alcoholic liver Disease. The goal of the study is to evaluate the prescription pattern in patients with alcoholic liver disease in order to show that alcohol abuse is a possible risk factor for poor medication adherence among patients taking common medications and to find the relationship between educational status and medication adherence.

WHO defined Medication adherence as "The extent to which a person's behavior in taking medication corresponds with agreed recommendations from a health care provider"^[10] It's one of the most essential aspects in determining therapy success, especially in chronic illness. Replacement therapy, maintaining serum drug concentrations to control various diseases of public health relevance when non-adherence is a major hurdle to achieving control are only a few examples of clinical settings where adherence is extremely critical for a better therapeutic outcome.

Most of the drugs are metabolized in the liver, any impairment in the liver function may lead to drug accumulation which in turn lead to the corresponding side effects. There is no specific treatment for ALD thus symptomatic treatment is mostly

preferred. As most of the drugs are having hepatotoxic effect there will be a change in the treatment plan. Thus, together with appropriate prescription and patient's adherence to the medication, it may hinder the progression of disease.

MATERIALS AND METHODS:

It is a Prospective observational study conducted for a period of 6 months in Vivekananda General Hospital, Hubli. It includes patients above the age of 18 years who are attending in IPD and OPD and subjects attending the department with all comorbidity. Study excludes patients below the age of 18 years, patients with incomplete medical records and also the patients who are not willing to give consent. The data is collected with a suitable data collection form. The collected data were entered and analyzed in Microsoft excel and the results are interpreted using appropriate statistical test.

Chi-square test was used to determine the correlation between educational status and medication adherence. It was done using SPSS 16.0 version.

ETHICAL CONSIDERATION: Ethical clearance for the study was obtained from Institutional Ethical Committee KLE College of Pharmacy, Hubli to carryout this research project.

RESULT

A total of 160 prescriptions with ALD were analyzed out of which 152 (95%) were males and 8 (5%) were females. The age groups were divided into 7 categories, in which majority of patients belonged to 38-48 age group (34%) and least was

from 18-28 age group. Literacy status of subjects were assessed and it was found that about 55 subjects (34.37%) were literate and 105 subjects (65.62%) were illiterate. Our study demonstrated that illiterate subjects were non-adherent to medications compared to the literate ones. 37 subjects were chronic smokers (23.125%) and 40% subjects were alcoholic since 10-20 years. The estimated duration of disease was less than 6 months, as most of them were newly diagnosed with the disease. The most common co-morbidity among subjects were Portal Hypertension (66.87%), followed by anemia (16.56%), HE (15.9%), AKI (10.19%) and Pleural effusion (5.73%). **PATTERN OF DRUG PRESCRIPTION:** Prescription pattern of subjects were analyzed, out of which 42% of drugs were prescribed with brand name and 18% were prescribed in generic name 11% antibiotics and 18% injections were prescribed to the subjects.

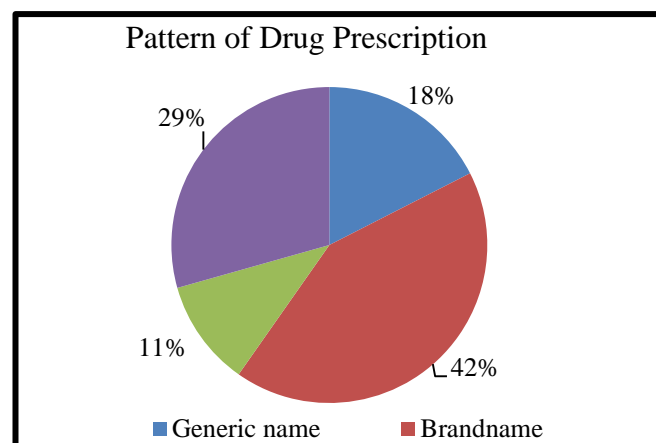


Figure 1: Pattern of drug prescription

CLASS OF DRUGS PRESCRIBED: Overall evaluation of prescription pattern demonstrated that about 76.87% of hepatoprotective drugs, 50.62% of antiemetics, 10.62% of anti-ulcer drugs and 38.12% of vitamins were used in the prescription.

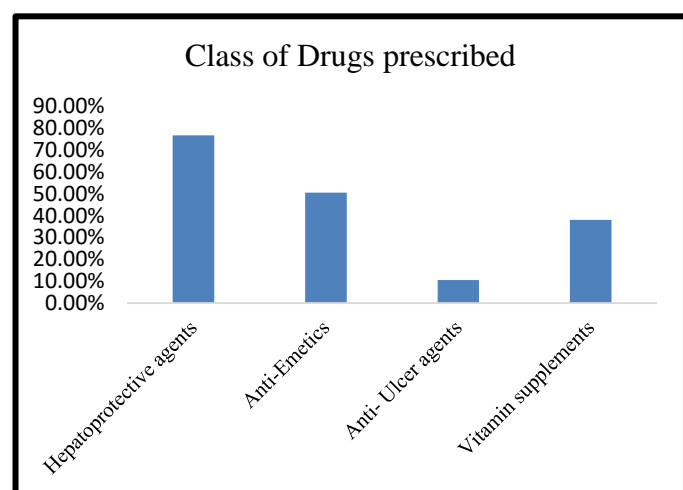


Figure 2: Class of drugs prescribed

PRESCRIPTION ANALYSIS OF HEPATOPROTECTIVE DRUGS: Among Hepatoprotective drugs, Udiliv and Hepamerz are the most commonly prescribed drugs, followed by Nirmin Hepa.

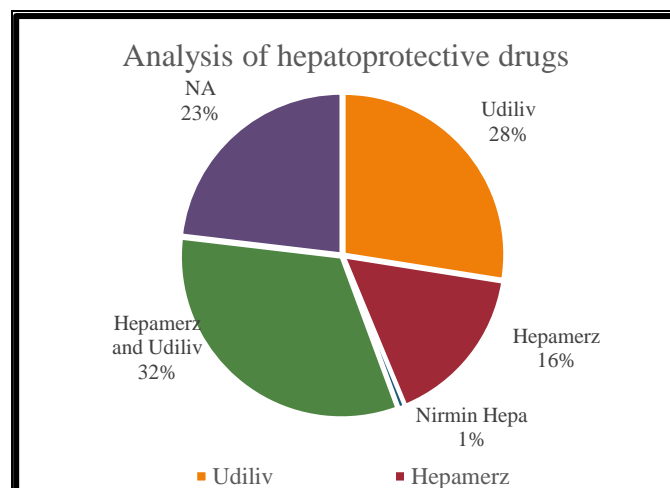


Figure 3: Analysis of Hepatoprotective agents

Table 1: Prescription Analysis

Pattern of drug prescription	Percentage
Generic name	29.27%
Brand name	70.65%
Antibiotics	18.22%
Injection	49.14%
Analysis of Hepatoprotective drugs	
Udiliv	44(35.7%)
Hepamerz	26(21.13%)
Nirmin hepa	1(0.81%)
Hepamerz & Udiliv	52(42.27%)
NA	37(30.08%)
Drug class	
Hepatoprotective agent	76.87%
Anti-emetics	50.62%
Anti- ulcer agents	10.62%
Vitamin supplements	38.12%

MEDICATION ADHERENCE: About 23% of subjects were highly adherent, 39% moderately adherent and remaining 38% were showing low adherence to the medication.

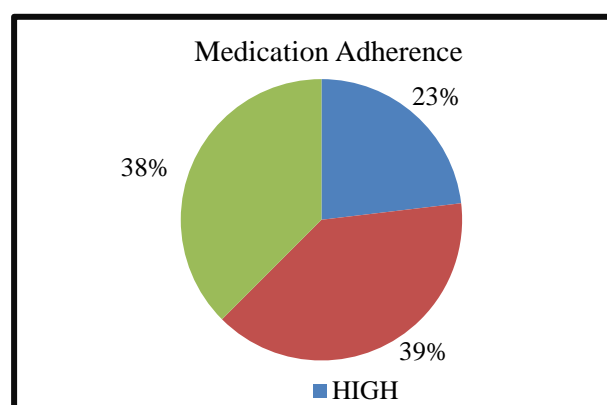


Figure 4: Medication adherence among subjects

CORRELATION BETWEEN MEDICATION ADHERENCE AND EDUCATIONAL STATUS: Out of 160 subjects most of them were illiterate and they were showing low adherence to medications.

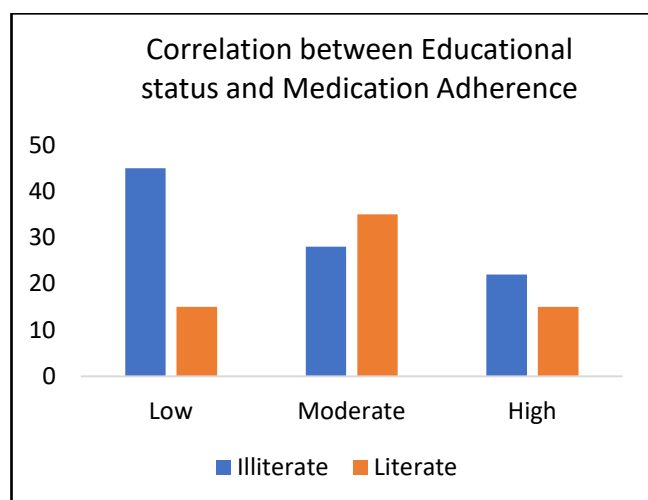


Figure 5: Correlation between Educational status and Medication Adherence

Table 2: Correlation between Educational status and Medication Adherence

Educational status	Low	Moderate	High	P-value
Illiterate	45	28	22	0.0021
Literate	15	35	15	

DISCUSSION:

Based on our evaluation there were only few studies conducted on the assessment of prescription pattern of drugs in ALD. Our study demonstrated the overall drug prescription pattern in ALD patients along with medication adherence. The study was conducted for a duration of six months. A total of 160 subjects with drinking histories and various comorbidities were included in the study. The study comprised a small number of female participants. We established a link between educational status and medication adherence through statistical research.

In our study the age distribution was highest in between 38 and 48 years and 8 out of 160 subjects included in the study were females while in a study conducted by Patil.A.M et.al^[3] on Alcoholic liver cirrhosis in a hospital-based patients, the prevalence of ALC based on Gender wise distribution was highest in males compared to females and also according to age wise distribution prevalence was highest in age group of 31-40 years.

Hepatoprotective drugs were the most commonly prescribed drug category in our study. It was found to be effective in preventing damage to liver in ALD patients. Hepamerz and Udiliv were the most usually given medications. Hepamerz protects the liver from toxic substances. The second most usually recommended medicine was anti-emetics. As nutritional deficiency is very common in ALD patients, vitamins were the third class of drugs prescribed. Long intake of alcohol can damage our gastric mucosa hence there is an importance of prescribing anti-ulcer agents. About 76.87% hepatoprotective drugs, 50.62% of antiemetics, 38.12% vitamins, 18.22% antibiotics and 10.62% of Antiulcer drugs

were used in subjects. All these drugs were prescribed due to the promising effects in preventing further damage of liver as well as the complications of the disease. This was in contrast to a study conducted by Kolasani^[4] on Prescription pattern of drugs in patients with ALD. Out of the 1365 drugs prescribed, 19.63% hepatoprotective drugs, 16.65% vitamins and minerals followed by 12.60% of antiulcer drugs were used among patients.

Most of the subjects were having the comorbidity of Portal Hypertension (66.87%) and Anemia (16.56%). Portal Hypertension is the high blood pressure of the portal veins. One of the major cause of Portal Hypertension is the cirrhosis (scarring of the liver) which makes the liver difficult to pass the blood through it. Medication Adherence among the patients were assessed using the 4 item morisky scale (MMAS-4 Scores). Most of the subjects were non-adherent to the medication (38%) thus by Educating the patients will helps in reducing the severity of disease to some extent.

With the increasing age of the population, co-morbidities like Portal HTN, Anemia, HE, Variceal bleeding etc. are also increasing. As the comorbid conditions adds up, there will be a prescription load of medicines. This may be considered as a burden for the patient. The lack of knowledge about one's own clinical condition can be taken as a barrier among patients. If simple information about these conditions are provided to these patients, it helps to overcome these barriers. The most important strength of our study is that we have broadly analyzed all the medications prescribed in patients with ALD, along with drug class, pattern of drug prescription and dosage forms. The small number of female subjects in our study hampered our ability to demonstrate a link between gender and medication adherence, and we also couldn't assess factors such as patient's concerns about drug side effects throughout treatment.

CONCLUSION

Our study assessed the prescription pattern of 160 subjects with alcohol induced liver diseases. Most people started alcohol consumption at younger age. Out of 7 age groups, 38-48 age group were having the maximum number of subjects with ALD. Co-morbid conditions were evaluated and most common comorbidities include Portal hypertension, Anemia, HE. Management was truly based on patients symptoms and disease state. Hepatoprotective drugs like hepamerz and udiliv were mostly prescribed among patients because of its promising effect in protecting the liver from further damage. MMAS-4 score showed that most subjects were non-adherent to the medications prescribed. Only 23% of the subjects were showing high adherence to the medication. Medication adherence and educational status were compared and associated among the patients. Chi-square test was used to compare these variables and the level of significance was found to be less than 0.05, hence there exist a correlation between them. Early detection of ALD and abstinence from Alcohol can be done on patients for preventing morbidity and mortality associated with disease. Proper and controlled drugs in ALD brings out great hope by adjusting the dose of drugs to reduce the risk of Hepatotoxicity, by making sure that the patient is adherent to the medication, and also by assessing different comorbidities for understanding the pathophysiology of different subjects.

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