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RESEARCH ARTICLE

CLINICAL PROFILE AND BIOCHEMICAL PARAMETERS IN PATIENTS WITH ALCOHOL DEPENDENCE SYNDROME ATTENDING TERTIARY HOSPITAL, IMPHAL

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Abstract

Context: Alcoholism is characterized by development of dependence and withdrawal. The liver enzymes, especially GGT and MCV have beenwidelyusedaspotentialmarkers to quantify severity.

Aims: To study clinical profile and biochemical parameters in patients with alcohol dependence syndrome attending tertiary hospital of Imphal.

Settings and Design: Department of Psychiatry, RIMS, Imphal, it was a cross sectional study.

Methods and Material:180 participants diagnosed with alcohol dependence syndromeas per ICD-10 criteria were included. Data obtained was recorded in semi-structured pro-forma.

Statistical analysis used: IBM SPSS version 21

Results: Most patients had tremulousness (89%), and were oriented (75%). Most had tachycardia (79.4%). AST was raised in 92.8% of patients with mean value of198.05 IU/L, and ALT was raised in 89.4% of patients with mean value of 98.53IU/L. GGT was high in 93.9% of patients with mean value of 638.87IU/L. MCV was normal in most of the patients having mean value of 97.3 fl.

Conclusions: Most participants diagnosed with alcohol dependence syndrome in this study had withdrawal symptoms in form of tremulousness and tachycardia, liver enzymes were significantly high in most of them. MCV was normal for most of the patients.

Introduction:-

Alcoholism is characterized by chronic vulnerability to relapse after cessation of drinking. The growing alcohol drinking rate in Indian population specially among the youths is alarming. Increased rate of hazardous and harmful drinking pattern is also a risk factor for developing alcohol dependence syndrome.Biochemical markers for alcohol abuse are widely available, but none is 100% efficient. The ideal marker should have a high enough sensitivity and specificity to be useful as a screening test, should distinguish between social drinking and heavy alcohol consumption and should not be elevated by nonalcoholic liver disease (NALD). The liver enzymes, especially gamma glutamyl transferase (GGT) and meancorpuscularvolume (MCV) have beenwidelyusedaspotentialmarkers.[1]

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Identifying the biochemical consequences of alcohol dependence has led to further study, including correlating laboratory findings to increase accuracy of identifying problem drinkers. Understanding the normal function, mechanism of abnormal findings, sensitivity, and specificity of the current laboratory studies can substantiate clinical suspicion of alcohol use.[2]

As per National Mental Health Survey, 2015-2016, prevalence of alcohol use disorder in Manipur is 5.1%.[3]

Literature on the clinical profile and biochemical parameters of patients who are dependent on alcohol is lacking in Manipur state.So, we took this study to understand and document the clinical and biochemical parameters in Manipuri alcohol dependent patients.

Subjects and Methods:-

180 indoor patients attending Department of Psychiatry, RIMS, Imphal whowerediagnosedwithalcoholdependencesyndromeaccordingtoInternationalClassificationofDiseases(ICD-10 Criteria)were includedin thestudy. Patients aged between 18-65 years including male and female were included. Presenceofanysignificantconcurrentillnessrequiringintensivemedical/surgicalmanagement and concurrentpresenceofothersubstancedependenceasperICD-10criteria'other than nicotine were excluded from study.Semi-structured socio-demographic pro-forma and semi structured pro-forma for clinical assessment for alcohol dependence syndrome were used to record the patient data. The data collected was entered and processed using IBM statistical package for social sciences (SPSS) version 21. Descriptive statistics like frequency, mean and standard deviation was computed. Result with p value less than 0.05 was considered as significant.Prior permission was taken from the Research Ethics Board, RIMS, Imphal. Informed consent of the participants of the study was taken as per ethical committee guidelines. Privacy and confidentiality were maintained by masking the personal identifiers and making the collected data accessible only to the investigators.

Results:-

Out of total 180 patients, majority of participants where oriented (75%), had tremulousness(89%)andtachycardia(79.4%).Majorityofparticipantsshowednosignofhypertension(66.7%) and jaundice (88.9%), see(Table 1).

Most of thepatientswerenon-anaemic(55.6%), the mean value of MCV in this study was found to be 97.33 FL. Majority of patients had normal MCV (50.6%).Majority of patients hadraisedtotal bilirubin (63.9%). Majority of patients had raised AST(92.8%) and mean value was 198.05IU/L. MeanvalueofALTinthisstudywas98.53IU/Land majority had raised ALT level (89.4%).The mean value of GGT in this study was 638.87IU/L and it was raised in 93.9% of patients, see (Table 2).

Discussion:-

As per magnitude of substance use in India survey (2019) prevalence of current alcohol use (10-75 years) in Manipur is 22.4%, which is higher than national level (14.6%).[4] This study probably will be the first study to document the clinical and biochemical parameters in alcohol dependence patients in Manipur.Similar findings were noted in Borah et al[5] study on 50 cases of alcohol delirium tremens and 50 cases without delirium tremens and found that mean values of GGT, ALT, AST was observed as 501.2±323.82, 103.54±61.52, 142.44±76.84 respectively.

Gogoi et al[6]conducted a cross sectional study on 150 patients and found out that 58.30% have abnormal ALT level (43.63±13.12IU/dl), 54.16% have abnormalAST serum levels (53.9±19.94IU/dl), and 54.17%participantshaveabnormalGGTserumlevels(71.08±24.47IU/l), which was less than the values found in our study.Sirohietal[7] conductedacrosssectionalstudyon370casesofalcoholdependencesyndromeandfound that tremulousnesswas present only in 27.56% of the participants, whereas in our study it was present in 89% of patients. Chavan et al[8] in their study found that decreased haemoglobin was in 85.3% of patients and increased MCV was seenin54%, which was higher than our study.

Table 1:- Clinical profile among the study population (N=180) in patients of alcoholdependence syndrome.

Clinicalprofiles	Frequency	Percentage	p-value
Orientation			

Oriented	135	75	0.001
NotOriented	45	25	
Total	180	100	
Tremulousness			
Present	161	89	0.001
Absent	19	11	
Total	180	100	
Jaundice			
Present	20	11.1	0.001
Absent	160	88.9	
Total	180	100.0	
Hypertension			
Present	60	33.3	0.001
Absent	120	66.7	
Total	180	100.0	
Tachycardia			
Present	143	79.4	0.001
Absent	37	20.6	
Total	180	100.0	

Table2:- Biochemicalparametersamongthestudypopulation(N=180)inpatientsof alcoholdependencesyndrome.

BiochemicalParameters	**Frequency**	**Percentage**	**Mean**	**S.D**	**p-value**
Hemoglobin					
>or=13g/dl (NoAnaemia)	100	55.6	13.14	1.89	<0.001
11-12.9 g/dl (MildAnaemia)	62	34.4			
8-10.9 g/dl (ModerateAnaemia)	15	8.3			
<8g/dl(SevereAnaemia)	3	1.7			
Total	180	100.0			
MCHC					
320-360=NormalMCHC	133	73.9	341.87	24.86	<0.001
<320=LowMCHC	17	9.4			
>360=HighMCHC	30	16.7			
Total	180	100.0			
MCV					
80-100 =Normal	91	50.6	97.33	8.12	<0.001
<80=LowMCV	7	3.9			
>100=HighMCV	82	45.6			
Bilirubin					
0.1-1=Normal	65	36.1	1.61	1.35	<0.001
>1=HighTotalBilirubin	115	63.9			
Total	180	100.0			

SGOT/AST					
5-40=NormalSGOT/AST	13	7.2	198.05	133.12	<0.001
>40=HighSGOT/AST	167	92.8			
Total	180	100.0			
SGPT/ALT					
5-30=NormalSGPT/ALT	19	10.6	98.53	74.36	<0.001
>30=HighSGPT/ALT	161	89.4			
Total	180	100.0			
ALP					
98-279=NormalALP	147	81.7			

>279=HighALP	33	18.3	201.44	115.69	<0.001
Total	180	100.0			
GGT					
1-50=NormalGGT	11	6.1	638.67	478.61	<0.001
>50=HighGGT	169	93.9			
Total	180	100.0			

Conclusion:-

Most of the alcohol dependence patients in this study were in withdrawal state, tremulousness and tachycardia were major signs and symptoms. Majority of the patients were oriented. Liver enzymes including AST, ALT and GGT was significantly high in most of the patients. MCV was within normal limits in most of the patients.

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