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Effect of control of Metabolic Syndrome in Non Alcoholic Liver Disease.

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Objective:- *To Know the effect of control of Metabolic Syndrome on Non Alcoholic fatty liver disease Bad vents*
Method*:- 300 Patients having Metabolic Syndrome (Deranged Fasting Blood Glucose, Serum Triglycerides & H D L) were considered. Ultra Sound Abdomen confirmed the presence of various grades of fatty liver disease in the above patients. These patients were advised to undergo Life Style Changes like intake of low Carbohydrate and fat diet and advised brisk walk for 30 minutes, five days per week .They were advised to continue to do the same for about 1 year 300 healthy individuals were taken as controls.*
Result:- *Life Style modification as advised for 1 year brought the F.Glucose, S.Triglycerides and H D L to near normal levels.*
Ultra Sound Abdomen was done which shows changes from Grade 3 to Grade 0.
Conclusion:- *The control of Metabolic Syndrome has profound effect on incidence and severety of Non Alcoholic Fatty Liver Disease.*

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I. Introduction:-

Metabolic Syndrome[1] is a clustering of at least three out of five medical conditions (High Blood Sugar, High Serum Triglycerides[2], Low Serum High Density Lipoproteins, Obesity and High Blood Pressure) Non Alcoholic Fatty Liver Disease also known as metabolic associated fatty liver disease (M A F L D)[3], is excessive fat accumulated in the Liver without any clear cause such as Alcohol intake. It may or may not progress to Non Alcoholic Steato Hepatitis (NASH)[4]. Fatty Liver is diagnosed based by Ultra Sound parenchymal brightness, Liver to Kidney contrast, deep beam attenuation, vessel wall and gall bladder wall[5]definition.Quantitative grades were conveniently labeled mild, moderate and severe or as grade 0 to grade 3 with 0 being normal.

II. Materials and Methods:-

The present study was conducted on 300 patients with deranged fatty blood glucose[6], Serum Triglycerides[7] and low H D L[8] and Ultra Sound Abdomen conforming NAFLD (Non Alcoholic Fatty Liver Disease)[9] . The Patients were taken from medical OPD of NRIIMS, Sangivalasa, Visakhapatnam during the period from Aug – 2018 to Feb – 2019. Repeat samples for the same parameters from the same patients were taken between Feb - 2020 and June - 2020 after subjecting the patients for life style changes which includes low fat diet, Brisk walking for 30 minutes, for five days per week . All necessary formalities and permission was taken from the Ethics Committies, NRIIMS.

Inclusion Criteria:-

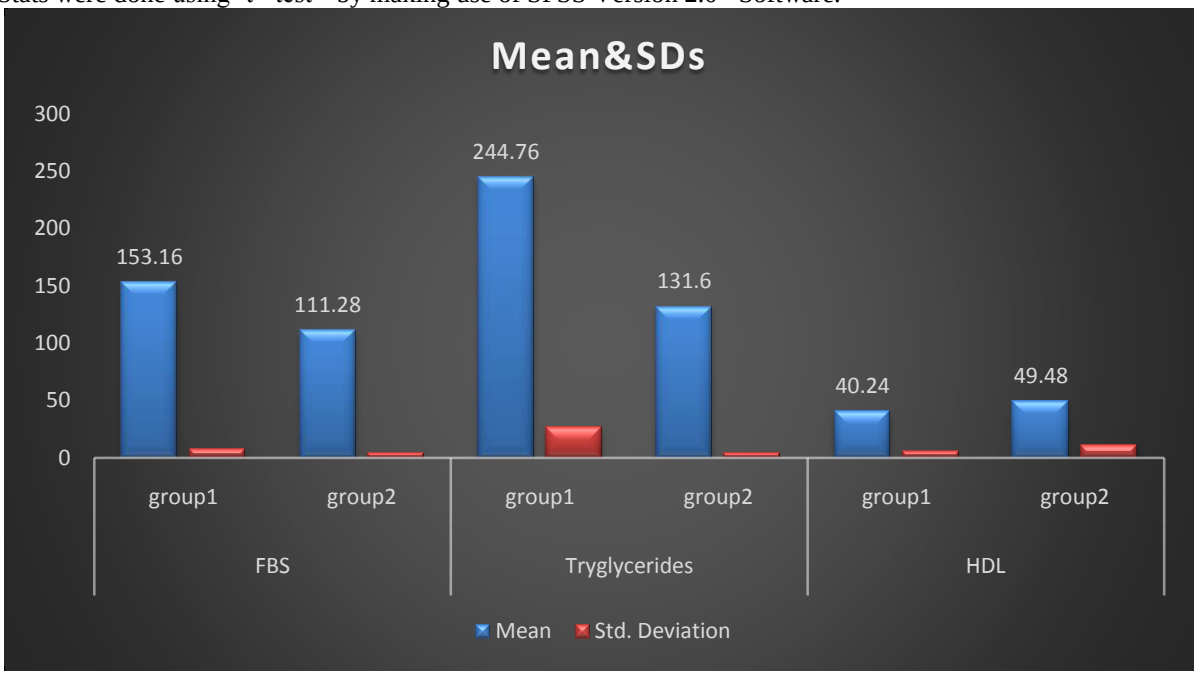
1. All patients above 25 years were considered.
2. All Male and Female were considered.

1. Patients with history of excessive Alcohol intake were excluded.
2. Patients with inflammatory changes in Ultra Sound Liver were excluded.

F. Glucose, S. Triglycerides and H D L were estimated by semi auto analyzer (Chem-5) in central lab , NRIIMS. Kits were purchased from Pavan Diagnostics, Visakhapatnam. Fasting Glucose was estimated by GOD POD method by Chem-5 semiautoanalyser . Normal levels varied from 90mg/dl to 110 mg/dl. S.Triglycerides was estimated by Chem-5 semiautoanalyser. Normal S.Triglycerides levels was less than 130mg/dl.HDL Level was in the normal range of 35mg/dl to 50mg/dl.

Statistics[10]:-

Stats were done using‘ t ‘ test[11] by making use of SPSS Version 2.0 Software.



t-test

Group Statistics					
	Group	N	Mean	Std. Deviation	Std. Error Mean
FBS	group1	300	153.16	7.462	.431
	group2	300	111.28	4.273	.247
Tryglycerides	group1	300	244.76	25.916	1.496
	group2	300	131.60	4.278	.247
HDL	group1	300	40.24	5.385	.311
	group2	300	49.48	10.552	.609

Independent Samples Test					
		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
FBS	Equal variances assumed	125.676	.000	84.357	598
	Equal variances not assumed			84.357	476.087
Tryglycerides	Equal variances assumed	497.024	.000	74.620	598
	Equal variances not assumed			74.620	315.283
HDL	Equal variances assumed	2.150	.143	-13.510	598
	Equal variances not assumed			-13.510	444.857

Independent Samples Test				
		t-test for Equality of Means		
		Sig. (2-tailed)	Mean Difference	Std. Error Difference
FBS	Equal variances assumed	.000	41.880	.496
	Equal variances not assumed	.000	41.880	.496
Tryglycerides	Equal variances assumed	.000	113.160	1.516
	Equal variances not assumed	.000	113.160	1.516
HDL	Equal variances assumed	.000	-9.240	.684
	Equal variances not assumed	.000	-9.240	.684

Independent Samples Test			
		t-test for Equality of Means	
		95% Confidence Interval of the Difference	
		Lower	Upper
FBS	Equal variances assumed	40.905	42.855
	Equal variances not assumed	40.904	42.856
Tryglycerides	Equal variances assumed	110.182	116.138
	Equal variances not assumed	110.176	116.144
HDL	Equal variances assumed	-10.583	-7.897
	Equal variances not assumed	-10.584	-7.896

III. Results:-

Before Life Style changes Fasting Blood Sugar had a mean of 153.16 with SD 7.462, Triglycerides with a mean of 2.44.76 with SD 25.9 and H D L with mean of 40.24 with SD 5.3. After 1 year of Life Style Changes Fasting Blood Sugar had a mean of 111.28 with SD 4.2, triglycerides with a mean of 131.6 with SD 10.5. All three had a ' P ' Value of < 0.05 (Significance) .Ultra Sound liver changes showed a transformation from grade 3 changes before life style changes to grade 0 changes after life style modification.

IV. Discussion:-

Fasting Blood Sugar showed ' P ' Value < 0.05 and also triglycerides and H D L also showed ' P ' value of < 0.05 which is significant. Ultra Sound haves showed changes from grade 3 changes to grade 0 changes. These findings are consistent with the study of Paschos and Paleta[12]. The above study showed association of NAFLD and Metabolic Syndrome and indicated that if insulin resistance is decreased in Metabolic Syndrome then changes of NAFLD can be reversed. The present study findings are also consistent with the study of Pandhi, B. D Shayeetal who showed that identification of risk factors in Metabolic Syndrome can predict the incidence of NAFLD.

V. Conclusion:-

Metabolic Syndrome and NAFLD are strongly associated and life style changes in Metabolic Syndrome can decrease the incidence of NAFLD.

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