Original Article

STUDY OF LIPID PROFILE IN NEPHROTIC SYNDROME BEFORE AND AFTER REMISSION IN CHILDREN IN A TERTIARY CARE HOSPITAL IN A SUB URBAN POPULATION

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Abstract

Background: Nephrotic syndrome, is defined by the presence of nephrotic-range proteinuria, edema, hyperlipidemia, and hypoalbuminemia.1 Our study aims to determine the proportion of various lipid fractions elevated inNephroticsyndromeandanalyseswhetherthereispersistentHyperlipidemiaafter Remission.

Aims: To assess the lipid profile in nephrotic syndrome before and after remission in children in a tertiary care hospital in a sub urban population.

Materials and Methods: Thestudy included 65 newly diagnosed nephrotic syndrome in pediatric ward . Otherrelevantinvestigationsweredone, lab investigations were done in all patients. SPSS 24was used for statistical analysis of results

Conclusion: Hyperlipidaemia was found to behigher in Frequent relapser/ steroid dependent patients than steroid responsiveboth during disease and Remission. Degree of hyperlipidemia is related to duration of treatment and relapse .SO regular follow up is necessary in all nephrotic patients, for better prognosis .

Keywords: HDL, LDL, TGL, Total Cholesterol, VLDL.

Introduction

Nephrotic syndrome, is defined by the presence of nephrotic-range proteinuria, edema, hyperlipidemia, and hypoalbuminemia.1 Hyperlipidemia one of the diagnostic criteria in nephrotic syndrome is usually observed during the active phase of illness and decreases with resolution of proteinuria. However persistent elevation of lipid fractions were observed in few studies 3. Children at risk for development of premature atherosclerosis in adulthood (elevated cholesterol levels) should be identified early in life to reduce the associated risks of heart disease. 4, 5 . Indian population has a different diet and genetic make up so our study helps in giving a idea on findings seen in nephrotic syndrome in children of indian population .

Need for the study:

In view of scarcity of studies on comparison of nephrotic syndrome before and after remission in children in Indian population.

Aims & Objectives of the study:

To assess the lipid profile in nephrotic syndrome before and after remission in children in a tertiary care hospital in a sub urban population

Materials and Methods:

This was a study done in department of Paediatrics in Meenakshi Medical College Hospital and Research Institute, a tertiary care teaching hospital located inEnathur, Kanchipuram. , after getting necessary permission and ethical committee clearance, Totally 65 newly diagnosed nephrotic syndrome were included in the study Detailed History, thoroughgeneral and systemic examinations were done. The standard investigations were done in cases . Three samples of blood were taken for each patient after overnight fast for serum lipidprofile.Sample 1 (Duringdiseaseactivity), sample 2 -(AfterRemissionattained), sample 3 (2 weeks after completing steroid treatment in steroid responsive patients)statistical analysis was done using SPSS24.

Tools used:

Blood sample for lipid totalcholesterol (TC),triglycerides(TGL),andHDL

Results:

Table I- Lipid Profile before and during treatment in steroid responders

	Total Cholesterol		**TGL**		**HDL**		**VLDL**		**LDL**	
	Mean	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**
Before Treatment	402	109	349	115	41.8	4.7	69.9	22.8	282	111
During Treatment	278	84	204	73	42.9	7.6	40.8	14.8	194	79
'p' value	0.0001		0.0001		0.0805		0.0001		0.0001	

From the Table I statistically significant difference exists in the total cholesterol, TGL, VLDL and LDL levels before treatment and during treatment. HDL levels do not have significant difference

Table II- Lipid Profile During relapse and after prolonged remission (III sample)insteroiddependentpatients

	Total Cholesterol		**TGL**		**HDL**		**VLDL**		**LDL**	
	Mean	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**
Before Treatment	566	146	492	233	41.3	3.4	97.5	46.9	401	140
After prolonged remission (iii) sample	289	92	212	76	42.8	3.4	42.3	14.2	213	80
'p' value	0.0004		0.0007		0.2905		0.0007		0.0016	

From the Table II statistically significant difference exists in the total cholesterol, TGL, VLDL and LDL levels before treatment and after prolonged remission IIIsample .HDL levels do not have significant difference

Table III. Comparison of mean lipid values of Steroid responsive andSteroiddependantpatients after treatment(III SAMPLES)

	Total Cholesterol		**TGL**		**HDL**		**VLDL**		**LDL**	
	Mean	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**
Steroid responsive	142	20	98	25	42.5	3.5	20	6.3	80.7	22.6
Steroid dependant	289	92	212	76	42.8	3.4	42.3	14.2	213	80
'p' value	0.0001		0.0001		0.9724		0.0001		0.0001	

From the Table III there is a statistically significant difference in the total cholesterol, TGL,VLDL and LDL levels of the Steroid responsive and Steroid dependant patients after treatment

Discussion:

Our study consisted of total 65 children out of which 40 were boys and 25 were girls. 53 patients were found to be steroid responsive and twelve patients were found to be steroid dependent. Serum total cholesterol, TGL, VLDL, LDL, Levels were found to be > 95th percentile for age and sex in all patients of steroid responsive with relapse and in steroid dependent cases in the present study, similar finding were seen in studies done by Zilleruelo, et al. In our study, about 1.9% of children after treatment was found to have elevated total cholesterol > 200 & 3.8% of children have elevated TGL > 150 and LDL > 130 when compared to Normal Indian children. Similar

findings were seen in western studies [2].Hence our study shows degree of hyperlipidemia is related to duration of treatment and relapse .

Conclusion

Degree of hyperlipidemia is related to duration of treatment and relapse .SO regular follow up is necessary in all nephrotic patients, for better prognosis .

Conflicts of interest: Nil

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