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A Study to Assess and Compare the Lipid Profile in Critically Ill Patients with Sepsis and without Sepsis

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Abstract: ***Background: Sepsis is a systemic inflammatory disease with high morbidity and mortality caused by a dysregulated host immune response to an infection. There is a significant transition in the distribution of circulating lipoproteins before and after sepsis. Alterations in lipid metabolism and the activation of lipid signaling pathways are components of the complex milieu underlying the pathophysiological sequelae. Lipid mediators play an important role in the proinflammatory and counterregulatory anti - inflammatory changes in the microvasculature in sepsis. Lipids play a critical role in the pathophysiology of sepsis and can impact the outcome of patients with this condition. Materials and methods: In this comparative observation study 100 critically ill patients, 50 each with sepsis and without sepsis were enrolled. From selected patients' socio - demographic variables and clinical parameter were observed; also, Lipid profile was obtained at 24 hours and 72 hours of admission in critical care unit. Result: The findings of the study reveals that there is significant difference between lipid profile of critically ill patients with sepsis and without sepsis ($p < 0.05$), also there is significant reduction in lipid profile in critically ill patients with sepsis on 24 hours and 72 hours of admission but there were no significant difference observed in lipid profile in critically ill patients without sepsis ($p > 0.05$) on 24 hours and 72 hours of admission. Conclusion: There is significant difference between lipid profile of critically ill patients with and without sepsis. There is significant reduction in lipid profile in sepsis patients and no significant changes in lipid profile in without sepsis patients.***

Keywords: Sepsis, Lipid profile, Patients

1. Introduction

Sepsis is a systemic inflammatory disease with high morbidity and mortality caused by a dysregulated host immune response to an infection. The signs and symptoms of sepsis are highly variable. Symptoms are nonspecific but give a picture of systemic illness. It is an increasingly common cause of mortality and morbidity in elderly, Immunocompromised and critically ill patients. SIRS (Systemic Inflammatory Response Syndrome) is a Generalized inflammatory response of the body to a variety of clinical conditions including infection, but not limited to infection.1 The Global Burden of Disease study estimated that there were 48.9 million sepsis cases worldwide in 2017, which led to 11.0 million sepsis - related deaths (19.7% of all global deaths) that same year.2 Understanding the prevalence, mortality rates, and microbiologic profile of sepsis at regional and national levels would be important first steps in addressing the burden of sepsis. Lipopolysaccharide (LPS), are large glycolipids that are major component of the outer membrane of Gram - negative bacteria, plays a key role in the initiation of sepsis. After LPS binds to CD14, the inflammatory cascade begins.3 Platelets contribute to microthrombi formation[4]. Collectively, these changes to the endothelium and microvascular environment in sepsis lead to decreased oxygenated blood flow to target organs, contributing to organ failure. In addition to hypoxic injury, tissues can be damaged directly by the release of toxic leukocyte - derived pro inflammatory mediators[5]. One important role of lipids in sepsis is their role in modulating the inflammatory response. Lipids can act as signaling molecules that regulate the production of inflammatory mediators, such as cytokines and prostaglandins, that are involved in the immune response to infection. Imbalances in lipid metabolism can lead to dysregulated inflammation, contributing to the severity of sepsis[6].

Objectives

- To assess and compare lipid profile in critically ill patients with sepsis and without sepsis in selected hospital of New Delhi.
- To find out association of selected socio - demographic variables and clinical parameters with critically ill patients with sepsis and without sepsis.

2. Methods and Material

A Quantitative research design was used to accomplish the objectives. Study was undertaken on 100 patients, 50 each of critically ill patients with sepsis and without sepsis. Patients were selected based on total enumeration sampling technique. Participants were selected based on inclusion criteria. Socio - demographic variables, Clinical parameters and lipid profile were used to assess and compare the lipid profile level in critically ill patients with sepsis and without sepsis on day - 1 (at 24hrs.) and day - 3 (at 72hrs.) of admission.

Tool

The data was collected by using socio - demographic variables, clinical parameters and lipid profile of patients.

Description of the Tool

In order to meet the objectives of the study, the tool were constructed which consist of two sections:

Section 1: Socio Demographic variables - It consists of age, sex, occupation and family size

Section II: Clinical Parameters – It consist of Diagnosis, medication history (antihypertensive drugs, antibiotic therapy and Immunosuppressants drugs), Comorbidity (Diabetes mellitus, hypertensive, chronic liver disease, CAD, COPD, Chronic renal failure, cancer and immunosuppressed state), SIRS criteria and investigation including lipid profile (Triglycerides, Total Cholesterol, Low density lipoprotein, High density lipoprotein and very low - density lipoprotein)

Data Collections

For conducting the main study, the data collections period was scheduled for 3 months from 31st October 2023 to 31st January 2023. After getting ethical clearance from the ethical committee of Holy Family Hospital, New Delhi.

3. Result

Description of sample characteristics

Table 1: Frequency and percentage distribution of sample characteristics of critically ill patients with sepsis and without sepsis pertaining to age, sex, occupation and family size, n=100

Sample Characteristics		Sepsis		Without Sepsis	
		Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Age (in years)	16 - 25	10	20%	6	12%
	26 - 35	7	14%	6	12%
	36 - 45	12	24%	8	16%
	Above 45 years	21	42%	30	60%
Sex	Male	22	44%	27	54%
	Female	28	56%	23	46%
	Others	0	0%	0	0%
Occupation	House - Wife/ husband	24	48%	25	50%
	Government Job	0	0%	1	2%
	Private Job	26	52%	24	48%
	Other	0	0%	0	0%
Family size	Extended	10	20%	12	24%
	Nuclear	40	80%	38	76%

*P<0.05, significant at 0.05 level

Table no.1 shows that majority of the critically ill patients admitted with sepsis i. e., 21 (42%) were in age group of above 45 years, 12 (24%) were in age group of 36 - 45 years, 10 (20%) were in age group of 16 - 25 years and 7 (14%) were in age group of 26 - 35 years. Majority of the critically ill patients admitted without sepsis i. e., 30 (60%) were in age group of above 45 years, 6 (12%) were in age group of 16 - 25 years, 6 (12%) were in age group of 26 - 35 years and 8 (16%) were in age group of 36 - 45 years. Majority of the critically ill patients admitted with sepsis i. e., 28 (56%) were female, 12 (44%) were male and none in 'other' category of sex. Majority of the critically ill patients admitted without sepsis i. e., 27 (54%) were male, 23 (46%) were female and none in 'other' category of sex. Majority of the critically ill patients admitted with sepsis i. e., 26 (52%) were having private job, 24 (48%) were house wife/husband and none in government job and 'other' category of occupation. Majority of the critically ill patients admitted without sepsis i. e., 25 (50%) were house wife/husband, 24 (48%) were having private job, 1 (2%) were having government job and none in government job and none in 'other' category of occupation. Most of the critically ill patients admitted with sepsis i. e., 40 (80%) were living in nuclear family size and 10 (20%) were having extended family size. Most of the critically ill patients admitted without sepsis i. e., 38 (76%) were living in nuclear family and 12 (24%) were living in extended family size.

Table 2: Frequency and percentage distribution of clinical parameters pertaining medication history and co - morbidity

Clinical Parameters		Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
		Sepsis		without - Sepsis	
Medication History	(a) Antihyperlipidemic drugs	26	53%	23	46%
	(b) Antibiotic therapy	50	100%	50	100%
	(c) Immuno - suppressants Drugs	0	0%	0	0%
Co - morbidity	(a) Diabetes Mellitus	29	58%	34	68%
	(b) Hypertension	32	64%	32	64%
	(c) Chronic liver disease	8	16%	13	26%
	(d) CAD	2	4%	1	2%
	(e) COPD	2	4%	7	14%
	(f) Chronic renal failure	20	4%	10	20%
	(g) Cancer	2	4%	0	0%
	(h) Immunosuppressed state	2	4%	0	0%

*P<0.05, significant at 0.05 level

Table no.1 shows that Majority of the critically ill patients admitted with sepsis i. e., 50 (100%) were on antibiotic therapy, 26 (53%) were on antihyperlipidemic drugs and none are on immunosuppressant drugs. Majority of the critically ill

patients admitted without sepsis i. e., 50 (100%) were on antibiotic therapy, 23 (46%) were on antihyperlipidemic drugs and none are on immunosuppressant drugs. Majority of the critically ill patients admitted with sepsis i. e., 32 (64%) were having hypertension, 29 (58%) were having diabetes mellitus, 20 (40%) were having chronic renal failure, 8 (16%) were having chronic liver disease, 2 (4%) were having CAD, 2 (4%) were having COPD, 2 (4%) were having cancer and 2 (4%) were on immunosuppressed state. Majority of the critically ill patients admitted without sepsis i. e., 34 (68%) were having diabetes mellitus, 32 (64%) were having hypertension, 13 (26%) were having chronic liver disease, 10 (20%) were having chronic renal failure, 7 (14%) were having COPD, 1 (2%) were having CAD and none were having cancer and immunosuppressed state.

Table 3: Mean, standard deviation, mean difference and 't' value comparison of Lipid profile with critically ill patients with sepsis and without sepsis on day 1 (at 24hrs.) and day 3 (at 72hrs.) of admission

Lipid Profile		Critically ill patients with sepsis patients (Mean ± S. D.)	Critically ill patients Without Sepsis (Mean ± S. D)	Mean Difference	't' value	df	'p' value
Tri - glycerides	1 day	168.82± 17.93	210.32± 45.25	41.50	6.03	64	0.00*
	3 day	163.72± 16.25	209.90± 45.35	46.18	6.78	15.09	0.00*
Total Cholesterol	1 day	221.36± 32.89	170.36± 23.47	51	8.91	88.69	0.00*
	3 day	221.24± 30.99	171.14± 22.64	50.1	9.42	89.66	0.00*
Low density lipoprotein (LDL)	1 day	98.96± 13.73	97.62± 13.41	1.34	0.49	98	0.00*
	3 day	94.16± 13.44	97.96± 13.55	3.8	1.57	98	0.00*
High Density lipoprotein (HDL)	1 day	36.28± 11.07	36.24± 10.41	0.04	0.01	97.8	0.00*
	3 day	34.92±11.62	36.44± 10.54	1.52	0.67	96.56	0.00*
Very Low - Density lipoprotein (VLDL)	1 day	25.96± 4.01	25.24± 4.552	0.72	1.18	98	0.00*
	3 day	23.92± 3.60	25.30± 4.87	1.38	1.95	97.85	0.00*

*P<0.05, significant at 0.05 level

Table no.3 shows that Mean of triglycerides of critically ill patients with sepsis on day 1 (at 24hrs.) and day 3 (at 72hrs.) of admission was 168.82 and 163.72 respectively and standard deviation was 17.93 and 16.72 respectively. Mean of triglycerides of critically ill patients without sepsis on day 1 (at 24hrs.) and day 3 (at 72hrs.) of admission was 210.32 and 209.90 respectively and standard deviation was 45.25 and 45.35 respectively. 't' value of triglycerides in critically ill patients admitted with sepsis and without sepsis on day 1 (at 24hrs.) of admission was 6.03; and df was 64, which was found statistically significant at 0.05 level of significance. This shows that there was a significant difference found between triglycerides of critically ill patients admitted with sepsis and without sepsis on day 1 (at 24hrs.) of admission. 't' value of triglycerides in critically ill patients admitted with sepsis and without sepsis on day 3 (72hrs.) of admission was 6.78; and df was 15.09, which was found statistically significant at 0.05 level of significance. This shows that there was statistically significant difference found between triglycerides of critically ill patients admitted with sepsis and without sepsis on day 3 (72hrs.) of admission. Mean of total cholesterol of critically ill patients admitted with sepsis on day 1 (at 24hrs.) and day 3 (at 72hrs.) of admission was 221.36 and 221.24 respectively and standard deviation was 32.89 and 30.99 respectively. Mean of total cholesterol of critically ill patients admitted without sepsis on day 1 (at 24hrs.) and day 3 (at 72hrs.) of admission was 170.36 and 171.14 respectively and standard deviation was 23.47 and 22.64 respectively. 't' value of total cholesterol in critically ill patients admitted with sepsis and without sepsis on day 1 (at 24hrs.) of admission was 8.91; and df was 88.69, which was found statistically significant at 0.05 level of significance. This shows that there was significant difference found between total cholesterol of critically ill patients admitted with sepsis and without sepsis on day 1 (at 24hrs.) of admission. 't' value of total cholesterol in critically ill patients admitted with sepsis and without sepsis on day 3 (at 72hrs.) of admission was 9.42; and df was 89.66, which was found statistically significant at 0.05 level of significance. This shows that there was significant difference found between total cholesterol of critically ill patients admitted with sepsis and without sepsis on day 3 (72hrs.) of admission. Mean of low - density lipoprotein of critically ill patients admitted with sepsis on day 1 (at 24hrs.) and day 3 (at 72hrs.) of admission was 98.96 and 94.16 respectively and standard deviation was 13.73 and 13.44 respectively. Mean of low - density lipoprotein of critically ill patients admitted without sepsis on day 1 (at 24hrs.) and day 3 (at 72hrs.) of admission was 97.62 and 97.96 respectively and standard deviation was 13.41 and 13.55 respectively. 't' value of low - density lipoprotein level of critically ill patients admitted with sepsis and without sepsis on day 1 (at 24hrs.) of admission was 0.49; and df was 98, which was found statistically significant at 0.05 level of significance. This shows that there was significant difference found between level of low - density lipoprotein of critically ill patients admitted with sepsis and without sepsis on day 1 (at 24hrs.) of admission. 't' value of low - density lipoprotein level of critically ill patients admitted with sepsis and without sepsis on day 3 (at 72hrs.) of admission was 1.57; and df was 98 respectively which was found statistically significant at 0.05 level of significance. This shows that there was significant difference found between level of low - density lipoprotein of critically ill patients admitted with sepsis and without sepsis on day 3 (72hrs.) of admission. Mean of high - density lipoprotein of critically ill patients admitted with sepsis on day 1 (at 24hrs.) and day 3 (at 72hrs.) of admission was 36.28 and 34.92 respectively and standard deviation was 11.07 and 11.62 respectively. Mean of high - density lipoprotein of critically ill patients admitted without sepsis on day 1 (at 24hrs.) and day 3 (at 72hrs.) of admission was 36.24 and 36.44 respectively and standard deviation was 10.41 and 10.54 respectively. 't' value of high - density lipoprotein level of critically ill patients admitted with sepsis and without sepsis on day - 0 of admission was 0.01; and df was 97.8, which was found statistically significant at 0.05 level of significance.

This shows that there was significant difference found between level of high - density lipoprotein of critically ill patients admitted with sepsis and without sepsis on day 1 (at 24hrs.) of admission. 't' value of high - density lipoprotein level of critically ill patients admitted with sepsis and without sepsis on day - 3 of admission was 0.67; and df was 96.56, which was found statistically significant at 0.05 level of significance. This shows that there was significant difference found between level of high - density lipoprotein of critically ill patients admitted with sepsis and without sepsis on day 3 (72hrs.) of admission. Mean of very low - density lipoprotein of critically ill patients admitted with sepsis on day 1 (at 24hrs.) and day 3 (at 72hrs.) of admission was 25.96 and 23.92 respectively and standard deviation was 4.01 and 3.60 respectively. Mean of level of very low - density lipoprotein of critically ill patients admitted without sepsis on day 1 (at 24hrs.) and day 3 (at 72hrs.) of admission was 25.24 and 25.30 respectively and standard deviation was 4.55 and 4.87 respectively. 't' value of very low - density lipoprotein level of critically ill patients admitted with sepsis and without sepsis on day 1 (at 24hrs.) of admission was 1.18; and df was 98, which was found statistically significant at 0.05 level of significance. This shows that there was significant difference found between level of very low - density lipoprotein of critically ill patients admitted with sepsis and without sepsis on day 1 (at 24hrs.) of admission. 't' value of very low - density lipoprotein level of critically ill patients admitted with sepsis and without sepsis on day - 3 of admission was 1.95; and df was 97.85, which was found statistically significant at 0.05 level of significance. This shows that there was significant difference found between level of very low - density lipoprotein of critically ill patients admitted with sepsis and without sepsis on day 3 (72hrs.) of admission.

Table 4: Comparison between Lipid profile of critically ill patients with sepsis on day 1 (at 24hrs.) and day 3 (at 72hrs.) of admission

Lipid profile	Mean ± S. D. (Day 0 (24hrs.))	Mean ± S. D. (Day 3 (72hrs.)	Mean Difference	't' value	df	'p' value
Triglycerides	168.82 ± 17.93	163.72 ± 16.25	5.1	11.70	49	0.00*
Total Cholesterol	221.36 ± 32.89	221.24 ± 30.99	0.12	16.64	49	0.00*
Low density lipoprotein	98.96 ± 13.73	94.16 ± 13.44	4.8	13.67	49	0.00*
High Density Lipoprotein	36.28 ± 11.07	34.92 ± 11.62	1.36	4.52	49	0.00*
Very Low - Density Lipoprotein	25.96 ± 4.01	23.92 ± 3.60	2.04	11.15	49	0.00*

*P<0.05, significant at 0.05 level

Table 4 shows that mean of triglycerides on day - 1 (at 24hrs.) and day - 3 (at 72hrs.) of admission were 168.82 and 163.72 respectively with mean difference of 5.1. Standard deviation were 17.93 and 16.25 respectively. 't' value was 11.40 and df was 49, which was found statistically significant at 0.05 level of significance. This shows that there was significant difference found between level of triglycerides of critically ill patients admitted with sepsis on day 1 (at 24hrs.) and day 3 (at 72hrs.) of admission. Mean of total cholesterol on day - 1 (at 24hrs.) and day - 3 (at 72hrs.) of admission were 221.36 and 221.24 respectively with mean difference of 0.12. Standard deviation were 17.93 and 16.25 respectively. 't' value was 16.64 and df was 49, which was found statistically significant at 0.05 level of significance. This shows that there was significant difference found between level of total cholesterol of critically ill patients admitted with sepsis on day 1 (at 24hrs.) and day 3 (at 72hrs.) of admission. Mean of low - density lipoprotein on day - 1 (at 24hrs.) and day - 3 (at 72hrs.) of admission were 98.96 and 94.16 respectively with mean difference of 4.8. Standard deviation were 13.73 and 13.44 respectively. 't' value was 13.67 and df was 49, which was found statistically significant at 0.05 level of significance. This shows that there was significant difference found between level of low - density lipoprotein of critically ill patients admitted with sepsis on day 1 (at 24hrs.) and day 3 (at 72hrs.) of admission. Mean of high - density lipoprotein on day - 1 (at 24hrs.) and day - 3 (at 72hrs.) of admission were 36.28 and 34.92 respectively with mean difference of 1.36. Standard deviation were 11.07 and 11.62 respectively. 't' value was 4.52 and df was 49, which was found statistically significant at 0.05 level of significance. This shows that there was significant difference found between level of high - density lipoprotein of critically ill patients admitted with sepsis on day 1 (at 24hrs.) and day 3 (at 72hrs.) of admission. Mean of very low - density lipoprotein day - 1 (at 24hrs.) and day - 3 (at 72hrs.) of admission were 25.96 and 23.92 respectively with mean difference of 2.04. Standard deviation were 4.01 and 3.60 respectively. 't' value was 11.15 and df was 49, which was found statistically significant at 0.05 level of significance. This shows that there was significant difference found between level of very low - density lipoprotein of critically ill patients admitted with sepsis on day 1 (at 24hrs.) and day 3 (at 72hrs.) of admission.

Table 5: Comparison between Lipid profile of critically ill patients without sepsis on day 1 (at 24hrs.) and day 3rd (72hrs.) of admission

Lipid profile	Mean ± S. D. day 1 (at 24hrs.)	Mean ± S. D. day 3 (at 72hrs.)	Mean difference	't' value	df	'p' value
Triglycerides	210.32± 45.25	209.90± 45.35	0.42	1.74	49	0.08
Total Cholesterol	170.36± 23.47	171.14±22.64	0.78	1.25	49	0.21
Low density lipoprotein	97.62± 13.41	97.96±13.55	0.32	1.26	49	0.21
High Density Lipoprotein	36.24± 10.41	36.44±10.54	0.2	0.66	49	0.50
Very Low - Density Lipoprotein	25.24± 4.552	25.30±4.87	0.06	0.277	49	0.78

***P<0.05, significant at 0.05 level**

Table no.5 shows that mean of triglyceride on day - 1 (at 24hrs.) and day - 3 (at 72hrs.) of admission were 210.32 and 209.90 respectively with mean difference of 0.42. Standard deviation were 45.25 and 45.35 respectively. 't' value was 1.74 and df was 49, which was found statistically non - significant at 0.05 level of significance. This shows that there was no significant difference found between level of triglycerides of critically ill patients admitted without sepsis on day 1 (at 24hrs.) and day 3 (at 72hrs.) of admission. Mean of total cholesterol on day 1 (at 24hrs.) and day 3 (at 72hrs.) of admission were 170.36 and 171.14 respectively with mean difference of 0.78. Standard deviation were 23.47 and 22.64 respectively. 't' value was 1.25 and df was 49, which was found statistically non - significant at 0.05 level of significance. This shows that there was no significant difference found between level of total cholesterol of critically ill patients admitted without sepsis on day 1 (at 24hrs.) and day 3 (at 72hrs.) of admission. Mean of low - density lipoprotein on day 1 (at 24hrs.) and day 3 (at 72hrs.) of admission were 97.62 and 97.96 respectively with mean difference of 0.32. Standard deviation were 13.4 and 13.55 respectively. 't' value was 1.26 and df was 49, which was found statistically non - significant at 0.05 level of significance. This shows that there was no significant difference found between level of low - density lipoprotein of critically ill patients admitted without sepsis on day 1 (at 24hrs.) and day 3 (at 72hrs.) of admission in Critical Care Unit. Mean of high - density lipoprotein on day 1 (at 24hrs.) and day 3 (at 72hrs.) of admission were 36.24 and 36.44 respectively with mean difference of 0.2 Standard deviation were 10.41 and 10.44 respectively. 't' value was 0.66 and df was 49, which was found statistically non - significant at 0.05 level of significance. This shows that there was no significant difference found between level of high - density lipoprotein of critically ill patients admitted without sepsis on day 1 (at 24hrs.) and day 3 (at 72hrs.) of admission in Critical Care Unit. Mean of very low - density lipoprotein on day 1 (at 24hrs.) and day 3 (at 72hrs.) of admission were 25.24 and 25.30 respectively with mean difference of 0.06 Standard deviation were 4.552 and 4.87 respectively. 't' value was 0.277 and df was 49, which was found statistically non - significant at 0.05 level of significance. This shows that there was no significant difference found between level of very low - density lipoprotein of critically ill patients admitted without sepsis on day 1 (at 24hrs.) and day 3 (at 72hrs.) of admission.

Table 6: Association between different demographic factors with critically ill patients with sepsis and without sepsis

Socio - demographic variables		Chi square χ^2 or Fisher test	Degree of Freedom (df)	'p' value
Age	16 - 25	3.46	3	0.33
	26 - 35			
	36 - 45			
	Above 45 years			
Sex	Male	0.81	1	0.42
	Female			
	Other			
Occupation	house - wife/ husband	1.02	2	0.59
	Government Job			
	Private Job			
	Others			
Family size	Extended	0.23	1	0.62
	Nuclear			

*P<0.05, significant at 0.05 level

Table no.6 shows that there is no association found between socio - demographic variables in terms of age, sex, occupation and family size with critically ill patients with sepsis and without sepsis as calculated value was found non - significant at 0.05 level of significance.

Table 7: Association between different clinical parameters with critically ill patients with sepsis and without sepsis.

Clinical Parameters		Chi square χ^2 or Fisher test	Degree of Freedom (df)	'p' value
Medication History	Antihyperlipidemic drugs	0.36	1	0.44
Co - morbidity	Diabetic Mellitus	1.07	1	0.30
	Hypertension	0.0	1	0.58
	Chronic Liver Failure	1.51	1	0.32
	CAD	0.34	1	0.50
	COPD	3.05	1	0.16
	Chronic renal failure	4.72	1	0.02
	Cancer	2.03	1	0.15
	Immunosuppressed state	2.041	1	0.49

*P<0.05, significant at 0.05 level

Table no 7 shows that there is no association found between clinical parameters in terms of age, sex, occupation and family size with critically ill patients admitted with sepsis and without sepsis as calculated value was found non - significant at 0.05 level of significance.

4. Discussion

The present study assess and compare lipid profile in critically ill patient with sepsis and without sepsis; and to assess the effectiveness of planned teaching programme on monitoring

patient with sepsis in staff nursing working in Critical Care Unit. Major findings of the present study had been discussed with the reference to result obtained by the researcher in the same aspect and it is seen that there is difference in lipid profile in critically ill patients with sepsis and without sepsis of critical care unit in Holy Family Hospital. Also, there is decline in lipid profile in critically ill patients with sepsis on day - 1 (at 24hrs.) and day - 3 (at 72 hrs.) of admission. A similar study was done by Mitra B[7] in Iran on 70 septic and without sepsis patients in Critical Care Unit and found that the concentrations of total cholesterol, HDL and LDL showed significantly lower values in septic group but no difference was found in triglyceride level. In septic group the initial and second levels of cholesterol were considerably higher in patients who died than those who survived. Another study was conducted by Sabari B, Ray S et al[8] on 'The Prognostic Value of Hypocholesterolemia. Total cholesterol, high density lipoprotein cholesterol, low density lipoprotein cholesterol and triglycerides were measured at the onset of sepsis (0 hour), at 24 hour and at 72 hours. The mean total cholesterol, HDL - C and LDL - C levels in the non - surviving group were significantly less than the surviving group. But difference in the triglyceride level was not significant. Another study by Elmehdawi RR[9] reported that lipid lowering drugs may result in clinically significant hypolipidemia. Hypocholesterolemia was also a predisposing factor for infection in certain conditions as well as a prognostic indicator during sepsis. A study by Pavel V[10] reported that Hypocholesterolemia was commonly observed in critically ill patients and the development of nosocomial infection and low serum lipid concentrations represented a potential therapeutic target in sepsis.

5. Conclusion

The study shows there is significance difference in lipid profile level in critically ill patient with sepsis and without sepsis patients on day - 1 (at 24hrs) and day 3 (72hrs.) of admission.

It was found that there is significant reduction in lipid profile of patient with sepsis admitted in Critical Care Unit and were no significant change in lipid profile of without sepsis patients in Critical Care Unit on day - 1 (at 24 hrs.) and day 3 (72hrs.) of admission.

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