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GLYCOSYLATED FERRITIN MEASURING SIGNIFICANCE FOR SECONDARY HEMOPHAGOCYTYC SYNDROME DIAGNOSTICS

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INTRODUCTION

Hemophagocytic syndrome (HPS) is a clinicopathologic condition characterized by systemic inflammatory reaction with cytopenia and tissue damage. Secondary HPS (SHPS) can be caused by different systemic disorders (immune, infectious, neoplastic). The overall clinical symptoms are similar to sepsis, so it could be difficult to differentiate among these entities. Ferritin levels are high in both cases, but the glycosylated/nonglycosylated ferritin fractions ratio is seems to be indicative.

OBJECTIVE(S)

The estimation of ferritin fractions ratio and biochemical profile significance in SHPS diagnostics and its differentiation from sepsis.

METHOD(S)

	SHPS	Lethal septic shock with multiorgan failure
N	40	24
Median age	57 (8-74)	57.5 (18-82)
Diagnostic criteria	One or more of the following <ul style="list-style-type: none"> Refractory fever Cytopenia Unexplained lung/CNS impairment 	All of the following <ul style="list-style-type: none"> Confirmed infection site SIRS Procalcitonin >10 ng/ml

Serum values analyzed

- alkaline phosphatase (ALP)
- alanine aminotransferase (ALAT)
- asparagine aminotransferase (ASAT)
- lactate dehydrogenase (LDH)
- bilirubin
- creatinine
- INR
- C-reactive protein (CRP)
- procalcitonin (PCT)
- total ferritin
- glycosylated ferritin percentage (%GF)

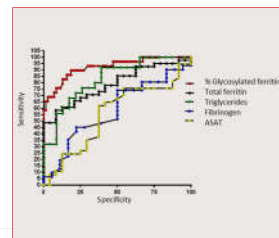
Data processing: Mann-Whitney U test and ROC-analysis

RESULT(S)

The most difference between sepsis and SHPS was observed for triglycerides, ferritin and percentage of glycosylated ferritin. Percentage of glycosylated ferritin fraction seems to be to be most indicative, which may make it useful for SHPS diagnostics and its differentiation from sepsis.

Dimension	median	25 quartile	75 quartile	Significance
Glycosylation Ferritin - SHPS	31	50	88	
Glycosylation Ferritin - sepsis	40.1	53.7	55.9	
Triglycerides - SHPS	1.81	2.2	2.43	
Triglycerides - sepsis	1.38	0.75	2.32	
Ferritin - SHPS	2635	2860	3359	
Ferritin - sepsis	2153	2294	2463	
Creatinine - SHPS	90	79	142	P<0.05
Creatinine - sepsis	106	126.5	162.5	
Procalcitonin - SHPS	15.05	12.76	12.38	
Procalcitonin - sepsis	55.9	38.9	108.15	
C-reactive protein - SHPS	80.6	28.3	181	
C-reactive protein - sepsis	214.5	185.9	287.5	
International Normalized Ratio - SHPS	2.37	1.02	2.08	
International Normalized Ratio - sepsis	1.73	1.47	2.4	

Differences in biochemical profile of SHPS and septic patients



ROC-analysis of the different biochemical-markers

	AUC
Glycosylation ferritin	0.92
Tryglicerides	0.78
Ferritin	0.72

Area under curve of the most significant values

CONCLUSION(S)

% Glycosylated ferritin appeared to be the most sensitive marker in differentiating of SHPS and sepsis

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