

Role of serum oncostatin m in assessment of disease activity in inflammatory bowel disease patients

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Introduction

Inflammatory bowel disease (IBD) refers to chronic, inflammatory condition primarily affecting the gastrointestinal tract, with an onset typically observed during late childhood and adolescence. Ulcerative colitis and Crohn's disease are two distinct diseases that fall under the spectrum of inflammatory bowel disease (IBD) all these led in not only intestinal but also extraintestinal manifestations. The landscape of IBD management is evolving, with a discernible shift toward tailored approaches that transcend the confines of a one-size-fits-all paradigm. A critical aspect of this evolution lies in the imperative to expedite the diagnosis of IBD, as delays can impede the timely initiation of treatment and compromise patient outcomes. Hence, there is a growing interest in identifying suitable biomarkers to diagnose and assess disease activity in IBD for early diagnosis and individualized treatment modalities. Among potential target biomarker is oncostatin M, a member of the IL-6 family, has gained a lot of interest lately in the diagnosis of IBD and disease activity.

Aim of the work

The objective of this investigation is to ascertain the utility of oncostatin M as an indicator for evaluating disease activity among individuals diagnosed with inflammatory bowel disease.

Patients and Methods

This investigation was carried involving 60 subjects with IBD, these patients were enrolled from the gastroenterology outpatient clinic as well as inpatient in the Alexandria main university hospital. The case group was divided into two equal groups, 30 cases had UC and 30 cases had CD. In addition, 30 healthy persons were recruited as control group. Serum oncostatin M was measured in both cases and control groups using ELISA.

Results

The serum levels of OSM in this study were statistically significant in the control group, UC group and CD group in our investigation ($p=.020$). Also, this study found that there is significance different in the level of serum OSM between control group and CD.

The optimal threshold value for serum oncostatin M in Crohn's disease (CD) was identified as exceeding 102.5 pg/ml, demonstrating a sensitivity of 66.7% and a specificity of 83.3%. The diagnostic accuracy was at 75%. However, there was no statistically significant difference was observed in the serum levels of OSM between UC and control groups ($p=1.00$). Results did not unveil its utility in determining disease activity in IBD.

Table 1: Comparison serum level of Oncostatin M (pg/ml) among the three studied groups

Serum level of Oncostatin M (pg/ml)	Ulcerative colitis (n=30)	Crohn's disease (n=30)	Control (n=30)	Test of significance p-value
- Min. - Max.	43.50-176.50	43.50-165.00	28.50-160.50	$H_{(df=2)}=7.791$ $p=.020^*$
- Mean \pm SD.	82.09 \pm 40.42	108.13 \pm 36.51	77.95 \pm 33.54	
- Median	63.00	124.25	69.25	
- 95% CI of the median	55.30-75.10	75.00-130.50	57.50-83.00	
- 25 th Percentile - 75 th Percentile	52.60-130.50	73.50-132.50	55.50-90.50	
Post Hoc Test				
	Ulcerative colitis	Crohn's disease	Control	
Ulcerative colitis		2.397 $p=.050$ NS	0.040 $p=1.00$ NS	
Crohn's disease			2.437 $p=.044^*$	
Control				

Table 2: Comparison between the two studied groups according to Serum level of Oncostatin M (pg/ml)

Serum level of oncostatin M (pg/ml)	Ulcerative colitis (n=30)	Crohn's disease (n=30)	Test of significance p-value
- Min. - Max.	43.50-176.50	43.50-165.00	$Z_{(MW)}=2.115$ $p=.034^*$
- Mean \pm SD.	82.09 \pm 40.42	108.13 \pm 36.51	
- Median	63.00	124.25	
- 95% CI of the median	55.30-75.10	75.00-130.50	
- 25 th Percentile - 75 th Percentile	52.60-130.50	73.50-132.50	

Table 3 : Comparison of serum OSM in studied groups according to disease activity

	Serum level of oncostatin M			
	Ulcerative colitis		Crohn's disease	
	Remission and Activity	p	Remission and Activity	p
Simple Endoscopic Score			$Z_{(MW)}=0.522$	0.602 NS
Mayo Score	$Z_{(MW)}=0.104$	0.917		
Crohn's disease activity index			$Z_{(MW)}=0.560$	0.575 NS
UCEIS	$Z_{(MW)}=0.825$	0.409		

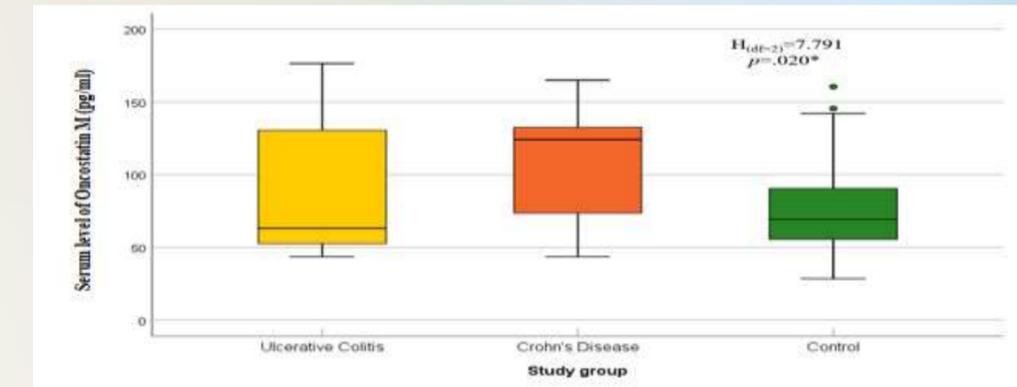


Figure 1: Box and whisker graph of serum level of Oncostatin M (pg/ml) in the three studied groups

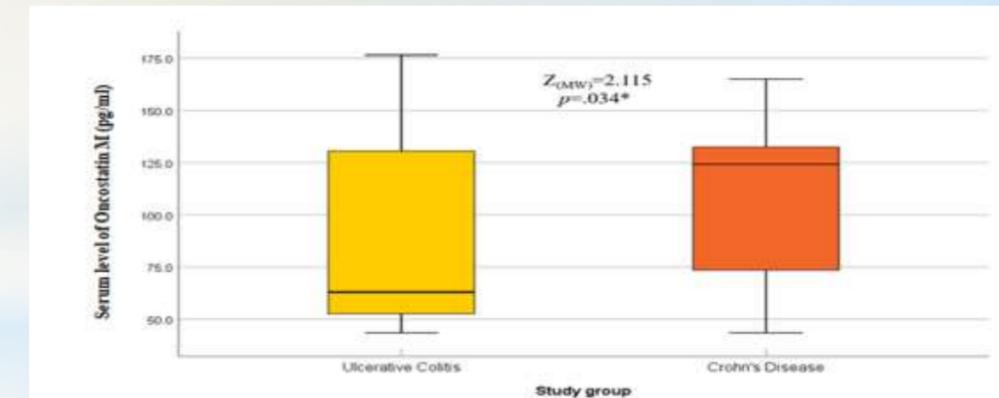


Figure 2: Box and whisker graph of serum level of Oncostatin M (pg/ml) in the two studied groups

Conclusion

In this study, researchers found the potential of serum oncostatin M as a diagnostic marker for Crohn's Disease, shedding light on new avenues for early detection and treatment. On the other hand, results did not unveil its utility in diagnosing Ulcerative Colitis or determining disease activity in Inflammatory Bowel Disease IBD.