THE ROLE OF SERUM VISFATIN IN THE DIAGNOSIS OF ACTIVE INFLAMMATORY BOWEL DISEASE

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INTRODUCTION

Inflammatory bowel disease (IBD) is characterized by repetitive episodes of inflammation of the gastrointestinal tract, IBD encompasses two main types: Ulcerative colitis (UC) and Crohn disease (CD) that are differentiated by their location and depth of involvement in the bowel wall, The most important determinant of the clinical course of IBD is the balance between proinflammatory, anti-inflammatory, and immunomodulating factors. Inflammatory reactions localized in the bowel wall may penetrate the surrounding visceral adipose tissue, evidence for submucosal fat deposition in the bowel is observed in CD and UC patients. The anatomic proximity of the bowel and visceral fat favors the activation of adipocytes. One of the recently reported adipokines involved in IBD is visfatin. It increases the epithelial expression of tumor necrosis factor alpha (TNF-α), interleukin (IL)-l, IL-6, and adhesion molecules. It is a noninvasive, easily measured, and an inexpensive marker to diagnose and monitor activity and severity in IBD.

AIM OF THE WORK

The aim of this study was to determine the serum concentrations of visfatin in IBD patients, to evaluate its role in the diagnosis of IBD and correlate it with disease activity and colonoscopic findings.

SUBJECTS AND METHODS

The study included 90 subjects that were divided as follow:

Group I: included 60 patients with IBD and were divided into 2 subgroups: (group 1a: 30 active CD patients) and (group 1b: 30 active UC patients)

Group 2: was a control group and included 30 healthy individuals.

All subjects involved in the study will be subjected to:

1. Complete history was taken emphasis on symptoms of gastrointestinal diseases.
2. Full clinical Examination
3. Ileocolonoscopy (patients).
4. Histopathological examination for the biopsy specimen (patients only).
5. Laboratory investigation:

•Complete blood count (CBC). •ESR. •Serum CRP. •Serum Albumin. •Serum Visfatin by ELISA technique. •Fecal markers: assessment of fecal calprotectin.

6. Assessment of disease activity in Crohn's disease patients clinically by CDAI and endoscopically by SES-CD.
7. Assessment of disease activity in UC disease patients clinically and endoscopically by Mayo score.

RESULTS

Table 1: Comparison between the three studied groups according to visfatin

	Group Ia (n = 30)	Group Ib (n = 30)	Group II (n = 30)	H	p
Visfatin					
Min. – Max.	1692.7 – 9034.5	694.3 – 4995.9	61.63 – 1983.85	62.614*	<0.001*
Mean ± SD.	4448.9 ± 1337.0	2521.7 ± 1462.3	390.88 ± 457.43		
Median (IQR)	4322.1 (4038.6 – 4811.0)	2019.3 (1466.7 – 4194.7)	258.83 (168.45 – 312.24)		
Sig. bet. grps.	p_1=0.005*, p_2<0.001*, p_3<0.001*				

IQR: **Inter quartile range** SD: **Standard deviation**

H: H for **Kruskal Wallis test,** Pairwise comparison bet. each 2 groups was done using **Post Hoc Test (Dunn's for multiple comparisons test)**

p: p value for comparing between the three studied groups

p_1: p value for comparing between **Group Ia** and **Group Ib**

p_2: p value for comparing between **Group Ia** and **Group II**

p_3: p value for comparing between **Group Ib** and **Group II**

-*: Statistically significant at $p \leq 0.05$

Group Ia: Patients with active Crohn's disease

- Group Ib: Patients with active UC

Group II: Control group (healthy individuals)

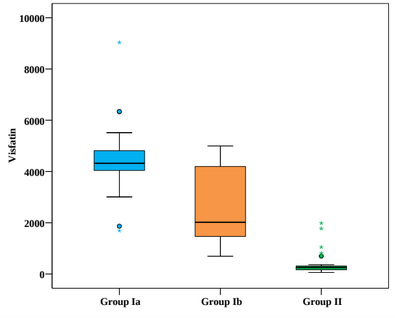

Figure 1: Comparison between the three studied groups according to visfatin

Table 2: Correlation between Visfatin and different parameters in group Ia (patients with active Crohn's disease) (n = 30)

	Visfatin	
	r_s	p
CDAI	0.824	<0.001*
SES-CD	0.871	<0.001*
Mayo score	0.968	<0.001*

r_s: Spearman coefficient

*: Statistically significant at $p \leq 0.05$

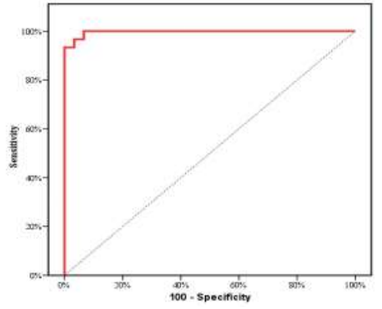

Figure 2:

ROC curve for visfatin to discriminate Crohn's disease patients (n = 30) from control (n = 30)

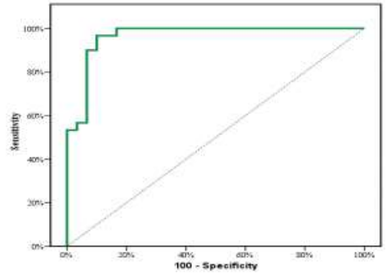

Figure 3:

ROC curve for visfatin to discriminate active UC patients (n = 30) from control (n = 30)

CONCLUSION

From the present study, we can conclude the following:

1. Serum Visfatin can be utilised as a diagnostic marker in CD and UC patients.
2. Serum Visfatin correlates well with disease activity indicators and can be used to measure disease activity in CD and UC patients. It also correlates with the laboratory parameters investigated, suggesting that it might be a potential independent biomarker with good sensitivity and specificity.