ASSOCIATION BETWEEN PELVIC ENDOMETRIOSIS AND INFLAMMATORY BOWEL DISEASE IN FEMALES IN REPRODUCTIVE AGE

Amr Adel Mansy, Essam El-Din Said Bedewy,* Marwa Abdelmoneim Saad Ali

Department of Obstetrics and Gynecology, Department of Tropical Medicine,* Faculty of Medicine, Alexandria University

INTRODUCTION

Endometriosis: Is defined as "the presence of endometrial-like tissue in ectopic locations, primarily the pelvic peritoneum, ovaries, and rectovaginal septum, which induces a chronic inflammatory reaction.

Main complaints pelvic pain, dysmenorrhea, and dyspareunia.

Several theories have been proposed to explain endometriosis pathogenesis.

The revised American Society of Reproductive Medicine Classification (rASRM) is the most accepted classification system for endometriosis, based on a laparoscopic evaluation of the patient (ranging from stage I to stage IV).

The gold standard for confirming endometriosis is laparoscopic inspection.

Inflammatory Bowel Disease: Is a chronic inflammatory disease of the gastrointestinal tract. Two major subtypes of IBD are identified, (Crohn's disease and ulcerative colitis). IBD is characterized by episodic abdominal pain, diarrhea, and bloody stools.

Fecal calprotectin is commonly used as a screening test for IBD.

AIM OF THE WORK

The aim of the work was to study the association between pelvic endometriosis and inflammatory bowel disease using fecal calprotectin analysis in cases diagnosed by laparoscope to have pelvic endometriosis.

PATIENTS AND METHODS

Patients: This study was cross- sectional study conducted on 50 cases diagnosed by laparoscopy to have pelvic endometriosis.

Methods: All cases will be subjected to the following:

1. Detailed history, Detailed examination, Pelvic examination to exclude any other pathology.
2. Laparoscopy for all cases. Prelaparoscopy transvaginal ultrasound to diagnose and measure endometriotic cysts and confirmed by laparoscopy.
3. Fecal calprotectin was measured and considered positive if >50 µg/g; those proved to be positive > 100 µg/g were subjected to colonoscopy and biopsy to document the presence of inflammatory bowel disease.

RESULTS

Table 1: Relation between calprotectin level and endometriotic cyst (n =50)

	Cyst			H	p
	No (n = 28)	Unilateral (n = 19)	Bilateral (n = 3)		
Calprotectin					
Min. – Max.	9.0 – 48.0	10.0 – 70.0	12.0 – 22.0		
Mean ± SD.	20.46 ± 11.03	31.05 ± 16.62	18.33 ± 5.51	6.158*	0.046*
Median	17.50	24.0	21.0		
Sig. brt. Grps.	p_1=0.015*,p_2=0.967,p_3=0.230				

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 comparison between the studied categories

p_1: p value for comparing between **No** and **Unilateral**

p_2: p value for comparing between **No** and **Bilateral**

p_3: p value for comparing between **Unilateral** and **Bilateral**

*: Statistically significant at $p \leq 0.05$

Table 2: Relation between calprotectin level and pelvic adhesions (n=50)

	Adhesion			H	p
	Minimal (n = 23)	Moderate (n = 24)	Sever (n = 3)		
Calprotectin					
Min. – Max.	10.0 – 48.0	9.0 – 46.0	42.0 – 70.0		
Mean ± SD.	20.35±9.38	24.08±12.74	57.33±14.19	7.728*	0.021*
Median	20.0	19.50	60.0		
Pairwise	p_1=0.506,p_2=0.005*,p_3=0.014*				

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 comparison between the studied categories

p_1: p value for comparison between **minimal adhesion** and **moderate adhesion**

p_2: p value for comparison between **minimal adhesion** and **sever adhesion**

p_3: p value for comparison between **moderate adhesion** and **sever adhesion**

*: Statistically significant at $p \leq 0.05$

Table 3: Relation between calprotectin level and rASRM stage (n=50)

	rASRM stage			H	p
	I (n=3)	II (n=36)	III (n=11)		
Calprotectin					
Min. – Max.	10.0 – 14.0	9.0 – 48.0	12.0 – 70.0		
Mean ± SD.	11.67 ± 2.08	22.28 ± 11.42	34.64 ± 18.26	8.545*	0.014*
Median	11.0	19.0	34.0		
Pairwise	p_1=0.073 ,p_2=0.006*,p_3=0.041*				

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 comparison between the studied categories

p_1: p value for comparison between **I** and **II**

p_2: p value for comparison between **I** and **III**

p_3: p value for comparison between **II** and **III**

*: Statistically significant at $p \leq 0.05$

CONCLUSION

Pelvic endometriosis and inflammatory bowel disease (IBD) share a set of mutual clinical manifestations. Fecal calprotectin analysis was used as a biomarker for IBD severity. Severity of endometriosis was judged by the cysts, adhesions and the rASRM staging.

The average calprotectin level in our study participants was 24.3 µg/g. In patients with no detected cysts (n = 28), the average level of calprotectin was found to be 20.46 µg/g. In contrast, in patients with unilateral cysts (n = 19), the average level of calprotectin was 24.0 µg/g. A statistically significant association between level of calprotectin (IBD severity) and underlying cysts (severity of endometriosis) is found (p-value: 0.046). Another relationship between calprotectin and the adhesions of endometriosis. Patients with minimal or moderate adhesions had average calprotectin levels of 20 µg/g and 19.5 µg/g, respectively. On the other hand, the average calprotectin level among patients with severe adhesions was as high as 60 µg/g. Levels of calprotectin were significantly higher in patients with severe adhesions compared to patients with minimal to moderate adhesions (p-value: 0.021).

Findings of our study go along with several previously-published researches investigating the relationship between endometriosis and IBD as a chronic, auto-immune, and clinically-similar disease.