A STUDY OF SOME BACTERIA OF THE GUT MICROBIOME IN EGYPTIAN PATIENTS WITH INFLAMMATORY BOWEL DISEASE

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Introduction

Inflammatory Bowel Disease including Crohn's disease and Ulcerative colitis, is multifactorial disease caused by different factors. One of these factors is "Dysbiosis" which is the change of the gut microbiome contents of bacteria, one of these bacteria is ***Akkermansia Muciniphila,***
which is a mucin- degrading bacteria using mucin as a sole source of carbon and nitrogen and it has anti-inflammatory effects in human and it may be affected in IBD.

Aim of the work

The aim of this study is to detect the level of *Akkermansia muciniphila* in the patients with IBD in comparison of healthy control and detect if there is any difference in its level in CD and UC patients.

Patients and Methods

This study will include eighty patients divided as follow:
Group (I): 30 patients with CD
Group (II): 30 patients with UC
Group (III): 20 healthy patients as control.

Bacteriome study: Molecular techniques
a. **DNA extraction:** DNA will be extracted from stool samples using fecal DNA extraction Kit.
b. PCR: Quantitative SYBR green real time PCR using for the identification and quantitation of the dominant genera which constitute the core of the *Akkermansia muciniphila*

Results

Table (1): Akkermansia muciniphila in the study groups

Bacteria	UC Cases (n=30)	CD Cases (n=30)	IBD control (n = 20)	H	p
Akkermansia Muciniphila					
Min. – Max.	0.0E+00 – 5.86E-02	0.0E+00 – 8.78E-02	2.04E-05 – 2.64E-01	2.275	0.321
Mean ± SD.	7.88E-03 ± 1.44E-02	9.20E-03 ± 1.74E-02	2.10E-02 ± 6.0E-02		
Median	6.85E-04	5.13E-04	1.71E-03		
IQR	1.18E-02–4.79E-05	1.57E-02–1.06E-06	4.23E—8.88E-04 03		
Sig. bet. grps.	$p_1>0.05, p_2>0.05, p_3>0.05$				

H: H for Kruskal Wallis test
SD: Standard deviation
IQR: Inter quartile range
p: p value for comparing between the studied groups
p_1: p value for comparing between **UC Cases** and **CD Cases**
p_2: p value for comparing between **UC Cases** and **IBD control**
p_3: p value for comparing between **CD Cases** and **IBD control**

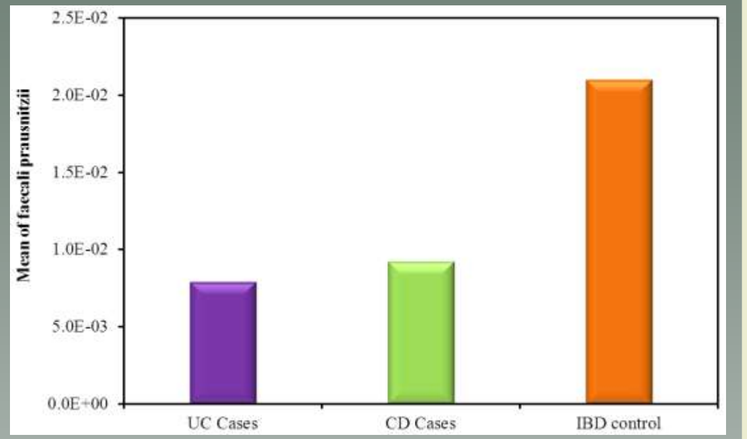

Fig (1): Comparison between the three studied groups according to Akkermansia Muciniphila

Conclusions

Akkermansia muciniphila is insignificantly lower in IBD patients in relation to healthy control, and no significant difference in the level of the bacteria between CD and UC patients.