



شبكة المعلومات الجامعية
التوثيق الإلكتروني والميكروفيلم

بسم الله الرحمن الرحيم



MONA MAGHRABY



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شبكة المعلومات الجامعية التوثيق الإلكتروني والميكروفيلم



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جامعة عين شمس التوثيق الإلكتروني والميكروفيلم

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A study of procalcitonin and c-reactive protein in chronic h.pylori gastritis and it's relation to severity of the disease

*A Thesis Submitted For Partial Fulfillment of Master Degree
In internal medicine*

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A decorative border in the shape of a heart, composed of intricate Islamic calligraphy in blue, green, and gold. The border is symmetrical and features a central orange and blue motif at the top and bottom. The text is centered within the border.

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قَالُوا سُبْحَانَكَ لَا عِلْمَ لَنَا إِلَّا مَا عَلَّمْتَنَا
إِنَّكَ أَنْتَ الْعَلِيمُ الْحَكِيمُ

صدق الله العظيم
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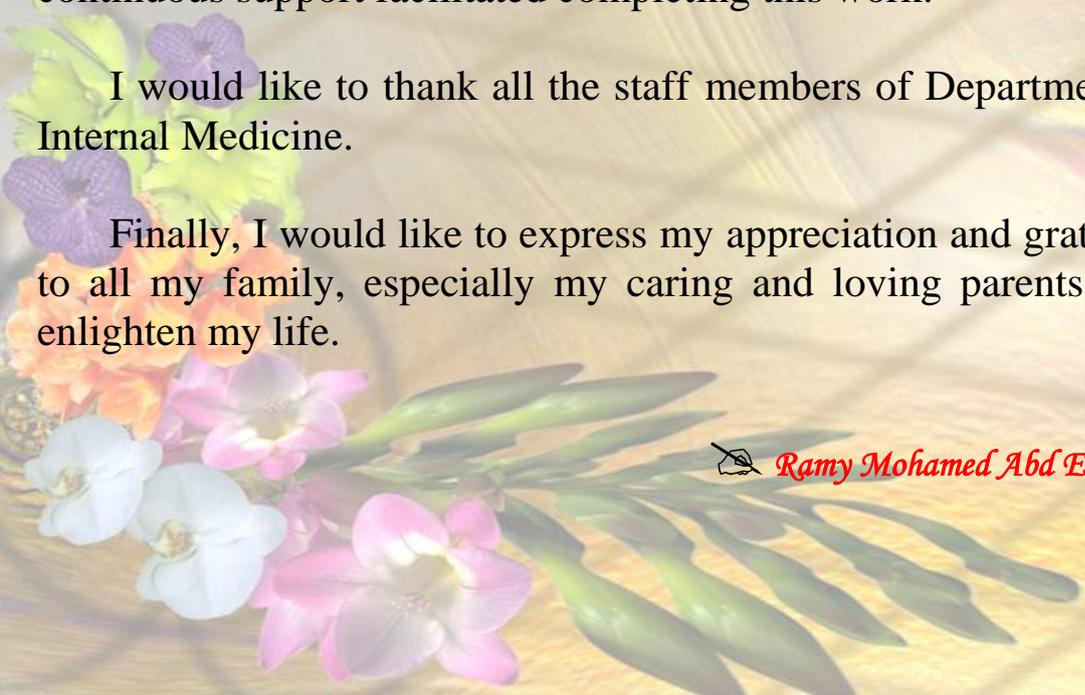
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✍ *Ramy Mohamed Abd El-Hady*

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LIST OF ABBREVIATIONS

Abb	Full Term
GERD	Gastroesophageal reflux disease
NSAIDS	non-steroidal anti-inflammatory drugs
IM	intestinal metaplasia
DU	duodenal ulcers
MAG	multifocal atrophic gastritis
PPI	proton pump inhibitor
PCT	Procalcitonin
CRP	C - reactive protein
CT	calcitonin
APR	acute phase proteins
SAA	serum amyloid A
PBMC	peripheral blood mononuclear cells
LDL	low density lipoprotein
TNF	tumor necrosis factor
IL	interleukin
HP	Helicobacter pylori
MALT	mucosa-associated lymphoid tissue

ABSTRACT

Background: Gastritis is an important premalignant lesion and recent studies suggested a production of inflammatory cytokine-like C-reactive protein during gastritis. This study aimed to determine any relationship between high sensitive C-reactive protein (hs-CRP) and inflammation activity among patients with gastritis, **Aim and objectives:** the aim of the study is to compare the levels of procalcitonin and CRP in serum between positive and negative H. pylori chronic gastritis, to correlate their levels with the severity of inflammation of chronic gastritis[h.pylori related and non h.pylori related]and to suggest any effect of different regimens of treatment and their levels in serum, **Subjects and methods:** This is a Cross sectional comparative study, was carried out at Internal Medicine medicine departments of Ain Shams university hospitals, from September 2019 till March 2020,on 75 patients divided into 3 groups:(Group A); positive H. Pylori chronic gastritis,(Group B); negative H. Pylori chronic gastritis,(Group C); normal control group, **Results:**There was positive highly significant correlation between H.Pylori severity and each of CRP and Procalcitonin where ($r=0.929$; $P<0.001$) and ($r=0.928$; $P<0.001$) respectively,**Conclusion:**PCT and CRP were effective markers for primary diagnosis, as well as eradication follow-up after therapy,when they were used in parallel with conventional diagnostic methods, **Keywords:** **Helicobacter pylori, C-reactive protein, inflammation, body mass index.**

INTRODUCTION

The definition of gastritis is based of histological features rather than clinical manifestations and picture in gastroscopy. It is classified based on the anatomical site, course, histological features, and underlying cause. These subjects were linked with having dyspepsia and Gastroesophageal reflux disease (GERD). In these patients, gastritis might be due to smoking, alcohol consumption, or heavy usage of non-steroidal anti-inflammatory drugs (NSAIDS).

Positive *Helicopacter pylori* gastritis is the most common gastritis globally. And one of the main reasons for this is that there is a large group of asymptomatic patients only being carriers, hence rendering complete eradication of the disease very difficult.

The diagnosis of *Helicopacter pylori* is categorized to invasive and non-invasive. The invasive methods include: Urease test (with sensitivity of about 79% to 97%, and specificity of 97% to 100%) performed via endoscopy and histology of the modified Giemsa stained gastric biopsy (sensitivity of 94% to 97% and specificity of 97% to 99%). The non-invasive methods include the serology tests, C-urea breath test, and stool antigen. The non-invasive tests are usually the first lines of tests to be acquired. They have more availability and relatively cost-effective, however they are used only for screening of patients with borderline test results. The non-invasive methods are not suitable for diagnosis of active infection or confirmation of eradication of the bacterium.

Negative *Helicopacter pylori* gastritis is diagnosed when certain features are fulfilled. This include a gastric mucosa biopsy to be negative in all 3 stains (Alcian blue stain, hematoxylin and eosin, and modified silver stain) serology for IgG for H. Pylori to be negative, a negative H. Pylori culture, and negative history for previous H. Pylori treatment.

Other causes of gastritis include: autoimmune gastritis, organisms other than *H. Pylori* like cytomegalovirus and herpes simplex, and rare causes like sarcoidosis and collagenous gastritis.

The clinical presentation and laboratory findings are the most essential steps in discerning the cause of gastritis in order to treat the disease successfully.

Procalcitonin is a prohormone of calcitonin. It is a polypeptide that consists of 116 AA and is released from C cells of the thyroid gland.

Normal Procalcitonin serum levels are usually low or immeasurable; less than 0.05 ng/ml. However, in systemic illness, it's produced by numerous tissues and is released in the circulation where the serum levels can rise up to 1000 times.

The serum level increases as fast as in 2-4 hours after trigger and maxes in 6-24 hours unlike the levels of CRP that starts to rise in inflammation after at least 12 hours. This makes the Procalcitonin a better tool to detect systemic inflammation.

Ruiz-Esteban R, Sarabia PR, Delgado EG, Aguado CB, Cuervo-Arango JA, Varela M. Procalcitonin and C-reactive protein levels as diagnostic tools in febrile patients admitted to a General Internal Medicine ward. *Clinical Biochemistry*. 2012; 45:22–25. 2012.

AIM OF THE WORK

The main objective is to compare the levels of procalcitonin and CRP in serum between positive and negative H. pylori chronic gastritis.

Second objective is to correlate levels of procalcitonin and CRP with the severity of inflammation of chronic gastritis[h.pylori related and non h.pylori related].

Another objective is to suggest any effect of different regimens of treatment and the levels of procalcitonin and CRP in serum.