ASSESSMENT OF SERUM C-REACTIVE PROTEIN IN WOMEN WITH MILD PREECLAMPSIA

Thesis

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In Obstetrics and Gynecology

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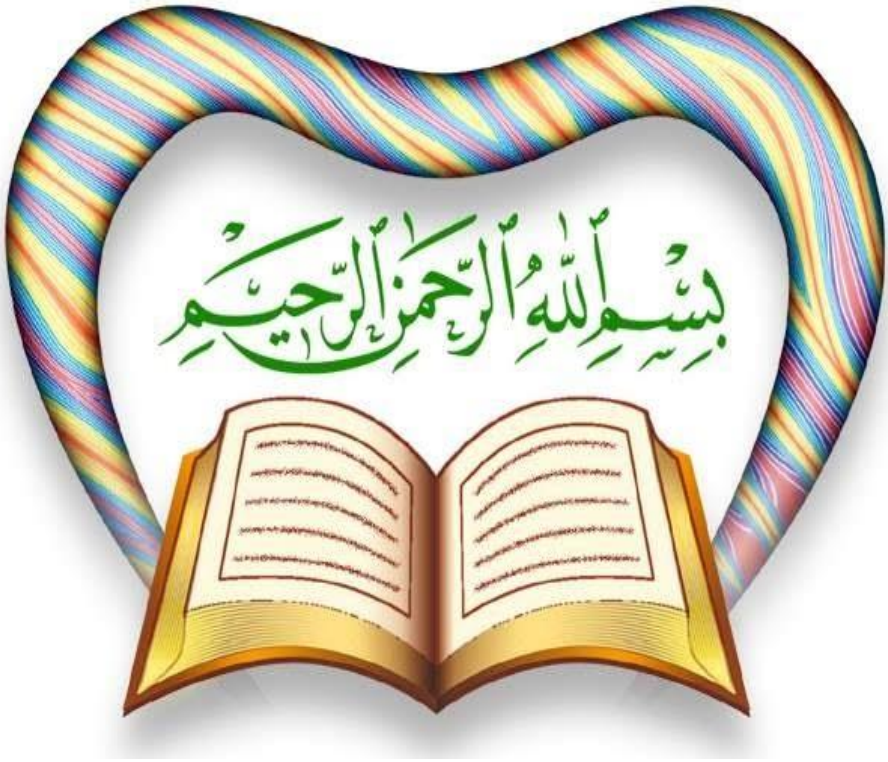

اقْرَأْ بِاسْمِ رَبِّكَ الَّذِي خَلَقَ ﴿١﴾

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Finally I would like to dedicate this piece of work to all my family.

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Rania Fahmy ALY

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INTRODUCTION

🕮 INTRODUCTION ✍

Title:

Assessment of serum C - reactive protein in women with mild preeclampsia**.**

Background:

Worldwide, the incidence of preeclampsia ranges between 2% and 10% of pregnancies. WHO estimates the incidence of preeclampsia to be seven times higher in developing countries (2.8% of live births) than in developed countries (0.4%) **,** the disease is mild in 75% of cases in the United States, and severe in 25% ***(Sibai, 2005)***. It remains one of the leading causes of maternal death worldwide (about 15% to 20% of maternal deaths in developing as well as developed nations ***(Campos et al., 2006)***.

Preeclampsia is a pregnancy specific syndrome that usually occurs after 20 weeks of gestation. Its clinical features include hypertension, proteinuria and varying degree of ischemic end organ damage ***(Van et al., 2000)***. Also it may be associated with other signs and symptoms such as edema, visual disturbances, headache, and epigastria pain. Laboratory abnormalities may include hemolysis, elevated liver enzymes, and low platelet counts (HELLP syndrome) ***(ACOG, 2002)***. Clinical and biochemical evidence suggests that disturbance in normal endothelial cell function might be a primary cause of preeclampsia ***(Wang et al., 2004)***.

Endothelial cell dysfunction and inflammation are considered to have a crucial role in the pathophysiological mechanism of preeclampsia ***(Ustun et al., 2005)***. Although the etiology of endothelial dysfunction in preeclampsia is unknown it has been postulated to be a part of an exaggerated maternal inflammatory response to pregnancy ***(Qiu et al., 2004)***. This inflammatory response involves also both the immune system, the clotting and fibrinolytic systems ***(Rangel et al., 2005)***.

Endothelial dysfunction is accompanied by elevated level of inflammatory markers, such as C-reactive protein (CRP) ***(Teran et al., 2001)***. This is a positive acute phase protein that increases in presence of infection or inflammation ***(Belo et al., 2005).*** Inflammatory response which increases during pregnancy may be explained by different stimuli occurring at different phases of pregnancy such as implantation, and the monocytes/macrophage production ***(Sacks et al., 2004)***.

An ideal predictor would have the following key characteristics: it should be based on agreed definitions and described exhaustively and exclusively; also it should be highly or optimally specific, sensitive, i.e. it detects few false positives and false negatives; also it should be reliable, valid, permit useful comparisons economical and it is evidence-based (***Mainz et al., 2003).***

Different predictors were used for early diagnosis of preeclampsia such as:

i. ‘Angiotensin II infusion’ but its positive predictive value varies between (0% and 93%) so the test is of no clinical use because of this great variation ***(McGlynn and smith., 1998).***

ii. 'Elevated serum uric acid levels' but the discriminatory value of serum uric acid as a predictor of preeclampsia remains to be proved ,In contrast it is found that serum uric acid levels did not vary significantly before the detection of hypertension ***(Sackett et al., 2000)***.

iii. 'Assessment of microalbuminuria', 'Fibronectin'**,** 'Plasminogen activator inhibitor-1', 'elevated the level of Vascular endothelial growth factors', 'alpha feto protein' and' increase level of placental growth factor' , Currently, there are no screening tests for preeclampsia that are reliable, valid and economical ***(Rubin et al., 2007).***

CRP is a protein measured by either antibodies labeled with an enzyme using an enzyme-linked immunosorbent assay, or by a fluorescent compound, or be polystyrene beads coated with antibodies or by Latex-agglutination test or automatic analyzer ***(Ridker et al.,2000)***.

Many studies were done to examine a relationship between preeclampsia and serum CRP levels , Some of these studies reported that serum CRP levels were higher in Preeclamptic woman as composed to healthy pregnant controls ***(Hwang HS et al., 2008).***

Similarly, there are few studies concerning correlation of CRP levels with severity of preeclampsia ***(McClure et al., 2009)***.

On the other hand there were other studies found that neither baseline C-reactive protein concentration nor change in concentration over gestation was associated with preeclampsia ***(Mainz et al., 2003).***

AIM OF THE WORK

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The aim of this work is to compare the level of CRP between normal pregnant women and Preeclamptic pregnant women.

REVIEW OF LITERATURE