

THE RELATION BETWEEN HELICOBACTER  
PYLORI SEROPOSITIVITY AND  
EMESIS GRAVIDARUM

**THE RELATION BETWEEN HELICOBACTER PYLORI  
SEROPOSITIVITY AND EMESIS GRAVIDARUM**

*Thesis submitted for fulfillment of Master Degree in  
Obstetrics and Gynecology*

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# بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

{قَالُوا سُبْحَانَكَ لَا عِلْمَ لَنَا إِلَّا  
مَا عَلَّمْتَنَا إِنَّكَ أَنْتَ الْعَلِيمُ  
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صدق الله  
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## *Abstract*

The aim of the study is to detect *Helicobacter pylori* seropositivity in females with vomiting (Emesis and Hyperemesis gravidarum) in the first trimester of their ongoing pregnancy in comparison to asymptomatic pregnant females

This study included 60 pregnant women during their first trimester recruited from Kasr El Aini outpatient clinic.

They were divided into two groups:

Group A: 30 pregnant women with emesis gravidarum

Group B: 30 healthy pregnant women with no vomiting.

Both groups were matched regarding maternal age, gestational age, parity and socioeconomic standard

### Key Words:

*Helicobacter Pylor* – Interleukin – Virulence Factors Toxin .

## List of Abbreviations

ACTH	Adrenocorticotrophic Hormone
Cag	Cytotoxin Associated Gene Protein
COPD	Chronic Obstructive Pulmonary Disease
DTB	Drug & Therapeutics Bulletin
ELISA	Enzyme Linked Immuno-sorbant Assay
FDA	Food and Drug Administration
FMIA	Flow Microparticle Immunofluorescence Assay
GERD	Gastroesophageal Reflux Disease
HCG	Human Chorionic Gonadotropin
HG	Hyperemesis Gravidarum
H.pylori	Helicobacter Pylori
IL	Interleukin
ITP	Idiopathic Thrombocytopenic Purpura
NSAID	Non-Steroidal Anti-Inflammatory Drugs
NVP	Nausea and Vomiting of Pregnancy
PCR	Polymerase Chain Reaction
Po	Per oral
PPI	Proton Pump Inhibitors
Th	T Helper Cell
TNF- $\alpha$	Tumor Necrosis Factor
UBT	Urea Breath Test
Vac A	Virulence factors toxin

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# INTRODUCTION

Emesis gravidarum, nausea and vomiting of pregnancy are a multifactorial condition with significant adverse effects on quality of life and health of mother and fetus that warrants recognition, investigation, and treatment (*Lane, 2007*).

Nausea and vomiting are common symptoms during pregnancy. Often are regarded as an unpleasant but normal part of pregnancy during the first and early second trimesters. The first known report of nausea and vomiting during pregnancy was documented approximately 4000 years ago (*Badell et al., 2006*).

Erroneously called morning sickness, symptoms usually started between the first and second missed menstrual period and continue until about 14 to 16 weeks. Although nausea and vomiting tend to be worse in the morning, they may continue throughout the day (*Cunningham et al., 2005*).

*Lacroix and co-workers (2000)* found that nausea and vomiting were reported by 75-80% of pregnant women and lasted an average of 35 days. Half had relief by 14 weeks, and 90 percent by 22 weeks. In 80 percent of women, nausea lasted all day.

Nausea and vomiting of pregnancy (NVP) is best thought of as a spectrum disorder with varying degrees of symptoms in different women. Symptoms can range from mild nausea to unbearable bouts of nausea and vomiting throughout the day (*Mazzotta et al., 2000*).

Hyperemesis gravidarum is the severe form of the nausea and vomiting of pregnancy. The reported incidence of Hyperemesis gravidarum is about 0.5-2.0% (*Goodwin, 2006*).

For most women, NVP is a self-limited condition during early pregnancy with no long-term negative impact on their health or the health of their fetuses. However, NVP affects a woman's life, both personally and professionally. For instance, almost 50% of pregnant women who experience nausea and vomiting believe it negatively affects their relationship with their spouse, and 55% feel depression (*Mazzotta et al., 2000*).

Although rare, case reports have described women who could not tolerate severe nausea and vomiting symptoms and chose abortion. Moreover, nearly 50% of working pregnant women believed their job efficiency was reduced due to nausea and vomiting, and approximately 25% required time off from work because of these symptoms (*Vellacott et al., 1988*).

This is making it also socioeconomic problem. The reported estimated cost for hospital care alone is more 500 million \$ for the 59.000 women hospitalized with hyperemesis gravidarum in the United State annually (*Goodwin, 2006*).

The etiology of nausea and vomiting of pregnancy remains unknown. But a number of possible causes have been investigated as psychological factors and elevated serum hormones concentrations as steroid hormone and gastric motility disturbances in early pregnancy (*Jeffrey et al., 2003*).

Studies have recently suggested that there is an association between emesis gravidarum and hyperemesis gravidarum with *Helicobacter pylori* infection (*Frigo et al., 1998, kazerooni et al., 2002, Shirin et al., 2004*).

*Helicobacter pylori* is a gram-negative, microaerobic, spiral bacterium that colonizes the stomachs of approximately half the

world's population and consequently is of major public health concern (*Loughlin et al., 2003*).

*Helicobacter pylori* infections cause chronic inflammation in the stomach (gastritis), which may progress to peptic ulcer disease and stomach cancer. In the gastric epithelium, *Helicobacter pylori* infections induce expression of inflammation-associated "sialylated" carbohydrates. The ability to bind to the glycosylated epithelial cells is considered to be essential for *Helicobacter pylori* to cause persistent infection and disease (*Aspholm et al., 2006*).

## AIM OF THE WORK

The aim of the study is to detect *Helicobacter pylori* seropositivity in females with vomiting (**Emesis and Hyperemesis gravidarum**) in the first trimester of their ongoing pregnancy in comparison to asymptomatic pregnant females.

# EMESIS GRAVIDARUM

## Definitions:

The terminology of the literature is sometimes confusing. The term emesis gravidarum should be defined as nausea alone or nausea, retching and occasional vomiting in early pregnancy. Sometimes the vomiting is more serious and persistent that interferes with fluid intake and nutrition. This condition is termed, hyperemesis gravidarum (HG) (*Jarnft and Samsioe, 1985*).

Hyperemesis gravidarum is most commonly defined as persistent vomiting in pregnancy not due to other causes (*Goodwin, 2006*).

Also hyperemesis defined as vomiting in pregnancy which is pernicious to produce weight loss, dehydration, acidosis from starvation, alkalosis from loss of hydrochloric acid, and hypokalemia (*Karadeniz et al., 2006*).

Nausea and vomiting are often regarded as an unpleasant but normal part of early pregnancy (*Badell et al., 2006*).

## Incidence:

### Epidemiologic factors affecting incidence:

#### 1- Multiple pregnancies:

There is increased incidence of nausea and vomiting in association with multiple pregnancies (*Davis, 2004*).

#### 2-Parity:

*Brousard and Richter (1998)* noted that there is increased incidence of hyperemesis in multiparity, but recently, *ACOG (2004)*

found that there is increased incidence of hyperemesis gravidarum in primigravida and in pregnant women who suffer from hyperemesis gravidarum in the previous pregnancy.

### **3-Age, Race and Color:**

Younger women, women with less education, non-smoker, black and obese are associated with increased incidence of emesis gravidarum (*Davis, 2004; ACOG, 2004*). However *Ben Aroya et al., 2005* has linked low body mass index to high incidence of nausea and vomiting in pregnancy

### **4-Enviromental factors**

The condition has been shown to be more common in urban women than in rural women and in low socioeconomic status (*Davis, 2004; ACOG, 2004*).

### **5-Smoking and miscarriage:**

Reduced incidence of nausea and vomiting in pregnancy is noted in smokers and in women who experience miscarriage (*Davis, 2004; ACOG, 2004*).