COMPARITIVE STUDY BETWEEN SERUM ANTI MULLERUAN HORMONE AND SERUM CA125 AS A PREDICTOR FOR THE SEVERITY OF ENDOMETRIOSIS IN INFERTILE WOMEN

Thesis
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LIST OF ABBREVIATIONS

AFC	Antral Follicle Count.
AFS	American Fertility Society.
ALKs	Activin receptor Like protein Kinases.
AMH	Anti Müllerian Hormone.
AMHRII	Anti Müllerian Hormone type II Receptor.
ASRM	American Society for Reproductive Medicine.
BMP	Bone Morphogenetic Protien.
BMPs	Bone Morphogenetic Proteins.
BMI	Body Mass Index.
CA125	Cancer Antigen 125.
CHO	Chinese Hamster Ovary.
COH	Controlled Ovarian Hyperstimulation.
COX2	Cyclooxygenase type
CT	Computed Tomography.
E2	Estradiol.
ELISA	Enzyme Linked Immunosorbent Assay.
EMX2	Empty spiracles homeobox 2
FSH	Follicular Stimulating Hormone.
GCTs	Granulosa Cell Tumours.
GIFT	Gamete Intra Fallopian Transfer
GnRH	Gonadotrophin Releasing Hormone.
hCG	human Chorionic Gonadotrophin.
IVF	In Vitro Fertilization.
MIS	Müllerian Inhibiting Substance.
MR	Magnetic Resonance
NK	Natural Killer cell.
NSAIDs	Non Steroidal Anti Inflammatory Drugs.
OC	Oral Contraceptives.
OHSS	Ovarian Hyper Stimulation Syndrome.
PCOS	Poly Cystic Ovary Syndrome.
PCR	Polymerase Chain Reaction.
PF	Peritoneal Fluid.

PG	Prostaglandin.
PMDS	Persistent Müllerian Duct Syndrome.
POF	Premature Ovarian Failure.
PP14	Placental Protein 14.
PTEN	Phosphatase and Tensin homolog.
R-AFS	Revised American Society classification.
TATI	Tumor Associated Trypsin Inhibitor.
TGF- β	Transforming Growth Factor-Beta
US	Ultrasonography.

دراسه تقارن بين نسبة AMH و نسبة CA125 في مصل الدم للتنبؤ بمدي إنتتشار داء بطانة الرحم الهاجره في السيدات العقيمات

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Abstract

The aim of the study to evaluate the clinical value of the serum anti müllerian hormone (AMH) level in comparison with the serum cancer antigen 125 (CA125) level for diagnosing and determining the severity of endometriosis among infertile women. The sample of the study was 25 women undergoing laparoscopy for infertility. Endometriosis was diagnosed by direct visualization of implants by laparoscopy and classified into stages according to the Revised American Fertility Society (R-AFS) classification. Blood samples were drawn on cycle's days 5-12 and stored for subsequent analysis of AMH and CA125 levels and the value obtained was correlated with the presence or absence of endometriosis and the severity of the disease. The findings of this study suggested the possibility of using serum AMH for predicting the severity of endometriosis among infertile women.

Key words:

Endometriosis, Anti Müllerian Hormone (AMH), Cancer Antigen 125 (CA125).

Introduction

Endometriosis is a condition characterized by the presence of endometrial tissue in ectopic foci outside the uterus. The incidence of endometriosis in the general population has been variably assesses with the main consensus being 1/100 women ***(Gleicher et al., 1995)***. In infertility population the incidence is higher with endometriosis accounting for the single most frequent cause of infertility ***(Wellbery et al., 1999).*** Furthermore from 25% to 40% of women undergoing diagnostic laparoscopy because of infertility are found to have endometriosis ***(Verkauf et al., 1987).***

One of the difficulties in the diagnosis of endometriosis is that macroscopic and histologic demonstration of lesions in the abdominal cavity by laparotomy or laparoscopy is essential. Before establishment of diagnosis with surgery, a less invasive test is therefore important for initial screening of possible cases of endometriosis. Recent technical progress in transvaginal ultrasonography ***(Dessole et al., 2003)*** and magnetic resonance imaging ***(Stratton et al., 2003)*** improves diagnostic accuracy. These tools, together with symptoms and pelvic examination, appear to detect endometriosis with high sensitivity and specificity; however, current techniques are still limited in detecting small peritoneal lesions ***(Eskenazi et al., 2001).*** In addition to noninvasive imaging technologies, several biological markers for endometriosis can also be applicable to clinics like serum ca125 and ca19-9***(Gagne et al., 2003).***

CA 125 is a serum marker for monitoring patients with epithelial ovarian cancer ***(Bast et al., 1998).*** Elevated CA 125 levels have been associated with a number of benign conditions and has been detected in several normal tissues including the endometrium and the lung. the more marked increases of Serum levels of CA125 in endometriosis is shown in women with stage III and IV, compared with Stage I and II. The value of CA 125 as a tool for monitoring treatment or disease progression has also been noted ***(Vinatier et al., 2000).***

In this study, a less invasive test is needed that can be used as the initial screening for cases of endometriosis. As women with endometriosis seem to have poor ovarian reserve with low oocyte and embryo quality. A meta-analysis of 22 studies evaluating in vitro fertilization outcomes found that patients with endometriosis had a pregnancy rate of nearly one half that of patients without endometriosis, with decreases in fertilization, implantation, and oocyte production rates ***(Barnhart et al., 2002)***.Another recent study suggests that Minimal/mild endometriosis is associated with a decrease in the follicular ovarian reserve ***(Lemos NA et al., 2008).***Furthermore other studies suggest anti mullerian hormone as a novel measure of ovarian reserve ***(De Vet et al., 2002).***

In this study we prospectively assess the significance of serum AMH as a predictor for the severity of endometriosis in comparison with serum CA125.

Aim of the work:

To evaluate the clinical value of the serum anti müllerian hormone (AMH) level in comparison with the serum cancer antigen 125 (CA125) level for diagnosing and determining the severity of endometriosis among infertile women.

EPIDEMIOLOGY OF ENDOMETRIOSIS

Endometriosis can affect any woman, from premenarche to post menopause, regardless of her race, ethnicity or whether or not she has had children. Endometriosis often persists after menopause. Endometriosis in postmenopausal women is an extremely aggressive form of this disease characterized by complete progesterone resistance and extraordinarily high levels of aromatase expression ***(Serdar and khaled, 2007)***. 50% of postmenopausal women diagnosed with endometriosis had no previous history of the disease. Rarely, girls may have endometriosis before they even reach menarche ***(Marsh and Laufer, 2006).***

Understanding the epidemiology of endometriosis has lagged behind other diseases because of methodological problems related to disease definition and control selection. Nevertheless, a better picture of the epidemiology of endometriosis has emerged over the past few decades. Prevalence of the disease in clinic populations varies from about 4% occurrence of largely asymptomatic endometriosis found in women undergoing tubal ligation to 50% of teenagers with intractable dysmenorrhea ***(Cramer and Missmer, 2002).***

Prevalence estimates endometriosis in clinic populations vary by diagnosis. The prevalence of largely asymptomatic endometriosis found in women undergoing tubal ligation was about 4%, ranging from 1 % to 7%. In a multicenter study of infertility, endometriosis was diagnosed in 17% of women with primary infertility, but in other series the prevalence varied from about 9% to 50%. As regard the pelvic pain, endometriosis was diagnosed in 8% of cases while other