

# Comparison between Bacterial Vaginosis and Candidiasis in Relation to Estradiol Level and Vaginal pH in Some Infertile Iraqi Women

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## **Abstract**

**Background:** Female fertility are affected by several factors including microbial and non microbial agents. Microbial infection is one of the most important causes for female infertility. The level of pathogenicity of microbial infections are affected by wide range of factor including age, physiological status, phase of menstrual cycle and race.

**Objective:** Comparison between bacterial vaginosis (B.V) and candidiasis in relation to Estradiol (E2) level and vaginal pH in some infertile Iraqi women

**Methods:** The study population was a subset of 109 infertile women attending Institute of Embryo Research and Infertility Treatment at Baghdad University, throughout the period from June till November 2004. Those infertile women were subjected to clinical examination by measuring vaginal pH, vaginal swabs collection to diagnosis of B.V using Amsel clinical criteria beside various micro-biological methods and diagnosis of candidiasis using mycological methods and serum collection from aspirated venous blood at late follicular phase for detection of E2 level.

**Result:** Forty eight infected infertile women were diagnosed with B.V from 109 infertile women. In those women the Estradiol mean was 41.17 Pg/mL near to lower limit of normal range of E2 level ( 18-147 pg/mL) and lower than E2

mean of healthy control group 132.5 Pg/mL in this study and most of them 93.75% had vaginal pH greater than 4.5. 24 cases with candidiasis were diagnosed from 109 infertile women. In those women the E2 mean was 183.2 Pg/mL higher than upper limit of normal range of E2 level and higher than E2 mean of healthy control group and candidial infection occur in normal pH range of 3.5 to 4.5

**Conclusions:** The results of the present study appeared that the hormonal disturbance which was associated with different infertility conditions may be predisposing factor in development of B.V and develop candidiasis among infertile women.

Elevated vaginal pH in infertile women who had B.V could be due to estrogen deficiency while normal pH in candidial infection because estrogen hormone increases cellular glycogen content which favors growth of Lactobacilli that metabolize glycogen to lactic acid and then producing an acidic environment.

**Key words:** Bacterial vaginosis, candidiasis, Estradiol level, infertile women

IRAQI J MED SCI, 2009; VOL.7 (3):24-31

## **Introduction**

The normal vaginal environment is characterized by a dynamic interrelationship between *Lactobacilli acidophilus* and other endogenous flora,

estrogen, vaginal pH and metabolic byproducts of flora and pathogens. Vaginitis develops when the vaginal flora has been altered by introduction of pathogen or by changes in the vaginal environment<sup>(1,2)</sup>.

Bacterial vaginosis is the most common infectious cause of vaginitis characterized by imbalance of vaginal ecosystem while candidiasis is the second most common cause of vaginitis<sup>(1,3,4)</sup>. These types of vaginal infections

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Received: 7<sup>th</sup> April 2009, Accepted: 5<sup>th</sup> July 2009.