Trichomoniasis in Women During The Child Bearing Period

Thesis

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بسم الله الرحمن الرحيم

"قَالُوا۟ سُبْحَـٰنَكَ لَا عِلْمَ لَنَآ إِلَّا مَا عَلَّمْتَنَآ ۖ
إِنَّكَ أَنتَ ٱلْعَلِيمُ ٱلْحَكِيمُ ﴿٣٢﴾ "

صدق الله العظيم

(سوره البقره)

To the soul of my father,

To my dearly beloved mother,

To my husband and kids.

ABSTRACT

In the present study (300) female patients in the child bearing period (age 20-45yrs) were selected from those attending the Obstetric and Gynecology out patient clinics as well as infertility section in Kasr El Aini hospital. Two hundred females were complaining of vaginal discharge, itching or both. One hundred were asymptomatic (control group). The females were divided into four groups, Group I included 40 pregnant females, Group II included 76 infertile females, Group III included 84 females using different contraceptive methods, Group IV included 100 asymptomatic females. Vaginal swabs were obtained form all female patients for examination by Direct wet mount examination, Giemsa staining method and InPouch TV culture to detect the presence of *Trichomonas vaginalis* infection in these studied groups. OSOM test was done to randomly selected 100 female patients only. The overall prevalence of infection was (36%). The prevalence of infection in each group was recorded to be 20%, 26%, 52% and 6% in the four groups respectively as detected by all tests done collectively. The InPouch culture was found to have the highest sensitivity and specificity (100%), followed by the OSOM test (87.5%) Wet mount had sensitivity of (56%), while Giemsa stain was the least sensitive (49%).

KEY WORDS:

Trichomonas vaginalis - Child bearing period - STD

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LIST OF ABBREVIATIONS

CDF	Cell detatching factor
CD16	Cell membrane molecule
CDC	Centers for Disease Control
C.trachomatis	*Chlamydia trachomatis*
C3b	Complement component
CP	Cystien proteinase
DNA	Deoxyribonucleic acid
DFA	Direct immunoflurescent
ECM	Extracellular matrix
HIV	Human immunodeficiency virus
HIV-I	Human immunodeficiency virus type I
HVECs	Human vaginal epithelial cells
IUCD	Intra uterine contraceptive device
IUD	Intra uterine device
KDa	Kilo dalton
MMP	Mitochondrial membrane potential
MCA	Modified Colombia agar
N.gonorrhoeae	*Neisseria gonorrhoeae*
N	Number
PEM	Plastic envelope method
PCR	Polymerase Chain Reaction
PVP	Predictive value of positive
PVN	Predictive value of negative
+ve	Positive
-ve	Negative
ROS	Reactive oxygen species

STD	Sexually transmitted disease
STI	Sexually transmitted infections
STS	Type of media for *trichomonas*
TV	*Trichomonas vaginalis*
T.vaginalis	*Trichomonas vaginalis*
USA	United States Of America
µl	Microliter
VECs	Vaginal epithelial cells
WHO	World Health Organization
yrs	years

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INTRODUCTION

Sexually transmitted infections (STI) are among the most common infectious diseases worldwide. The World Health Organization estimated that over 340 million cases of curable STI occurred in 1999 alone (WHO, 2000).

The spread of (STI) continues despite various attempts at controlling the epidemics. Sexually transmitted diseases are responsible for significant morbidity and mortality world wide because of their adverse effects on reproductive health and their ability to increase the risk of sexual and vertical transmission of human immuno-deficiency virus type I (HIV-I) (Moodley and Surm, 2000) .

Trichomonas vaginalis infection is estimated to be the most widely prevalent non viral sexually transmitted infection (STI) in the world. Historically, *T. vaginalis* has been viewed as a nuisance infection that is primarily associated with genitourinary symptoms. It has also been considered a biological marker for high-risk sexual behavior; thus, the detection of *T. vaginalis* would trigger an evaluation for other pathogens (Moodley et al., 2002).

While *T. vaginalis* is associated with sexual risk behavior and other STIs, it is now considered an important independent pathogen. Multiple studies have linked *T. vaginalis* infection to significant and costly adverse health outcomes, such as pelvic inflammatory disease, vaginitis, cervicitis, preterm labor, urethritis and prostatitis (Moodley et al., 2002). It can also cause ectopic pregnancy, tubal factor infertility and adverse pregnancy outcomes (Chesson et al., 2004).

T. vaginalis is cytopathic to vaginal cells, usually surviving only in the urogenital tract of humans and is associated with potentially increased risk of both transmission and acquisition of human immunodeficiency virus (HIV) (Chesson et al., 2004). *In vitro*, *T. vaginalis* disrupts the urogenital epithelia and enhances HIV replication. It also interferes with human spermatozoal motility and may produce sperm agglutination which may lead to infertility (Guenther et al. ,2005).

In an estimation for the prevalence of (STDs), it was estimated that about 7.4 million new cases of *T. vaginalis* infection occurred in year 2000 in the United States, compared to 2.8 million cases of *Chlamydia trachomatis* infection and 718,000 cases of *Neisseria gonorrhoeae* infection (Weinstock et al., 2004).

The prevalence of *T. vaginalis* is likely to be underestimated because there are no guidelines for *T. vaginalis* screening of women, and clinicians often rely upon insensitive diagnostic methods. Screening for trichomonas infection has been performed using direct microscopy or culture of the organism in most settings that include *T. vaginalis* as a component of a sexually transmitted disease (STD) control program. However, many programs do not include *Trichomonas* infection screening. *Trichomonas vaginalis* is not a reportable infection tracked by the Centers for Disease Control and Prevention in the United States (Laga et al.,1993).

Recent reports of the impact of *Trichomonas* infections on the risk of HIV transmission and acquisition suggest that more aggressive trichomonas infection screening measures may be warranted. Laga et al. (1993) demonstrated a nearly twofold increase in the odds of HIV infection in