CORRELATION BETWEEN CYTOLOGY AND OTHER METHODS FOR DIAGNOSIS OF TRICHOMONAS VAGINALIS

THESIS

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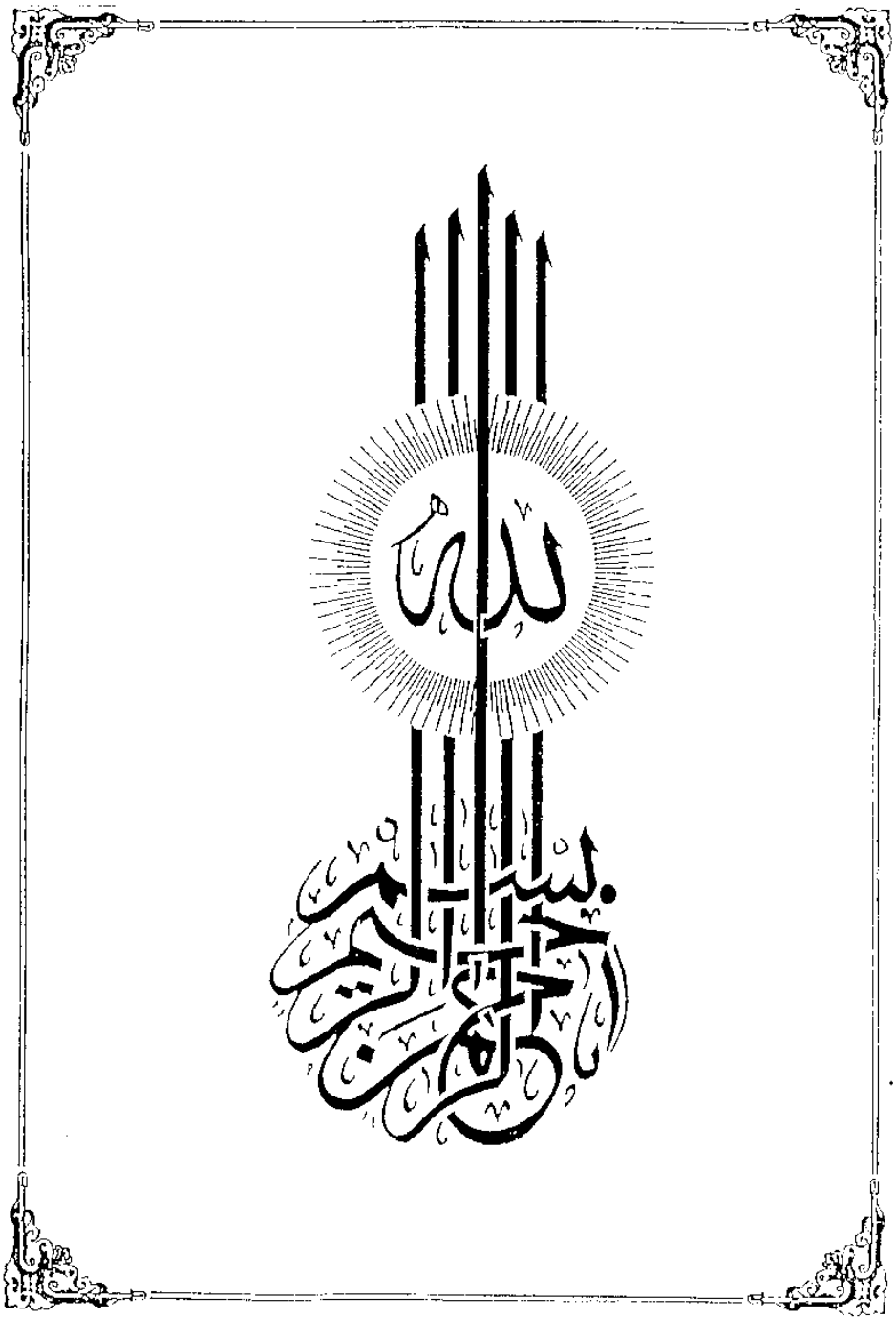

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INTRODUCTION

Introduction

Trichomonas vaginalis (T.V.) was first discovered by Donnè in 1836 . It is a motile pear shaped tetra flagellate characterised by the oval nucleus and the jerky movement of the cell. (Jeffcoate 1980).

T.V. is the commonest sexually transmitted disease also trichomoniasis may be transmitted to neonates during passage through an infected birth canal (Al-Saliki et al, 1974). Non venereal transmission can occur also and transfere of the organism from one individual to another by indirect contact certainly happens via contaminated towels & improperly sterilized specula (Jeffcoate, 1980).

The symptoms of acute urogenital trichomoniasis are variable. The patient may exhibit profuse, forthy and malodorous vaginal discharge. Also there is pruritus vulva, dysuria, frequency of micturation, abnormal vaginal bleeding, vaginal tenderness and congestion causing dyspareunia (Bard, 1982).

In some patients symptoms are totally lacking and they become symptomatic if untreated and as many as 50% reject the organism without medication and a few remain carriers (Fleury, 1981).

The disease found in female patients of all age groups but most often in the young adult (Jeffcoate, 1980), and less frequent in postmenopausal ladies.

T.V. usually infests the vagina and urethra but may also involve the bladder, Bartholin's glands, Skene's glands and endocervix. Also the organisms have been found in the cervix, the body of the uterus, the fallopian tubes and even in the blood stream (Tindall, 1987). In this respect T.V. act as a carriers for other microorganism from the lower to the upper genital tract causing ascending infection that might end in endometritis, salpingitis, peritonitis and sterility. (Honigberg, 1983), (Keith et al, 1984).

T.V. induce the usual tissue inflamatory reaction with polymorph nuclear leukocyte infiltration (Tindall, 1987) and cause damage of epithelial cells either due to direct contact or to substances released into the vaginal fluid (Lavery, 1984).

T.V. is more prevalent in abnormal cytological patterns compared to normal smear (El-Lathy et al, 1982) and it is known to induce atypia in cells desquamated from the cervix (Patten et al, 1963).

The diagnosis of T.V. could be difficult as the discharge may be absent or altered by other associated infection. Diagnosis is suspected by symptoms and confirmed by microscopic identification of viable trichomonads in wet mounts of vaginal discharge, or by fixed and stained

AIM OF THE WORK

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The aim of this work is to correlate between cytological, microscopic and culture methods in the detection of trichomonas vaginalis to find out the most acurate diagnostic method.

REVIEW OF THE LITERATURE

Morphology

The discovery of the protozoon of trichomonas vaginalis dates back to 1836 when Donne of France described the organism to be found in the purulent fluids & secretions of genital organs.

Trichomonas vaginalis is a motile, pear shaped or rounded organism, approximately 10-30 um in length & 8-10um in width. (Jeffcoate 1980),(Barnes 1983).

It is a little larger than a pus cell & about half the size of an exfoliated superficial vaginal cell(Jones 1982).

There are four free anterior flagella arising from a single stalk & a fifth flagellum which is embedded in the undulating membrane that extends about half way across the organism(Rein ,1980).

The blepharoblast, a fibrillar apparatus situated at the anterior end of the body, has a direct connection with the flagellae.

The costa, a slender, chromatic basal rod also arises from the blepharoplast & is situated beneath the undulating membrane.

The axostyle originates at the blepharoplast & passes downwards centrally & projects posteriorly as a small spine(Adam et al 1971).

A single oval nucleus lies anteriorly & includes five chromosomes that undergo mitosis as the organism reproduces by binary fission(Rein,1980).

The cytoplasm is basically clear but frequently contains varying amounts of cytoplasmic particles, vacuoles, debris & bacteria. Rarely intracytoplasmic leukocytes or erythro cytes may be identified(Bard,1974)

No mitochondria have been observed(Ovcinnikov et al, 1975),but the organism generates metabolic energy with hydrogenosomes, unique cytoplasmic organelles containing superoxide dismutase, enzymes catalyzing pyruvate cleavage, & possibly small amounts of DNA(Gutteridge & Coombs, 1977).

Electron microscopy has shown acid phosphatase in the Golgi apparatus, this & other hydrolytic enzymes may be important in the digestion of engulfed cellular debris (Lavery ,1984).

All areas of the cell surface are capable of phago cytosis & can ingest bacteria & erythrocyte(Ovcinnikov et al,1975).

T.V. is strictly anaerobic & can utilize a variety of carbohydrates(Rein,1980).

However, other investigators found that, T.V. is facultative anaerobe because it form lactic acid and carbon dioxide from sugars & starches, but excessive oxygen reduces carbohydrate metabolism & depresses growth(Bard,1982).

Over 100 species of the genus trichomonas have been reported, but only three have been isolated in human. T.V. is the most common & the only known pathogen(Bard,1982).

Trichomonas hominis can be recovered from the lower intestinal tract, more frequently from patients with symptomatic bowel disease(Willcox,1960),and Trichomonas Tenax (T. buccalis) may be found in the oral cavity in patients complaining of pyorrhea(Wantland & Lauer,1970),but neither T.hominis nor T.Tenax has demonstrated pathogenicity or a capability of colonising the human urogenital tract (Bard ,1982) .

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Epidemiology

T.V. infection occurs in 8 to 15% of married women, the infection is essentially venereal in origin (Barnes, 1983).

The prevalence of infection tend to be higher in population with greater numbers of sexual partners, & is 70% in prostitutes. (Jirovec & Petru, 1968), (Willcox 1960), Gallai & Sylvestre 1976).

The epidemiologic importance of sexual transmission is supported by recovery of the organism from 66-100% of the female partners of infected men (Whittington, 1957), (Catterall & Nicol, 1960), and 30-80% of the male sexual partners of infected women (Weston & Nicol, 1963), (Jirovec& Petru, 1968), (Morton, 1975), (Gallai & Sylvestre, 1976).

T.V. is present among 20-50% of women attending clinics for sexually transmitted disease (Rein, 1975).

Fleury 1981, stated that T.V. is more frequent among multiparous & those who marry young, but (Osborne et al, 1982) found that T.V. were more common in patients with reproductine failure.

Trussel, 1947, found T.V. in 28.9% pregnant women in comparison to 17.9% of non pregnant women. He considered the infestation to be more frequent during pregnancy.