CHAPTER II

LITERATURE REVIEW

Vaginitis is one of the most common diseases in clinical gynaecology. Vaginitis accounts for more than 10 million office visits each year. It is probably the most common infection treated by the obstetrician-gynecologist and other primary-care physicians (Sebastian Faro, 1991), it also is among the most common problems that challenge the gynecologist (Friedrich E.G.Jr., 1985). In the recent past, the problem of vaginitis has been regarded merely as a minor annoyance to women (Howard L. Kent, 1991) or has all too often been ignored by the medical community. The frequency and the importance of them have been recognized only in recent years (Sobel J.D., 1985), (Howard W.Jones III, 1988). For example, as a fact, there are still some who believe that without the presence of certain pathogenic bacteria, Trichomonas alone cannot produce vaginal inflammation (Howard W. Jones III, 1988), but in fact it is recommended that women with either symptomatic or asymptomatic trichomoniasis have to be treated (Carol A. Spiegel, 1989).

The three common clinical entities of candidiasis, trichomoniasis, and bacterial vaginosis account for over 90% of the cases of vaginitis (Sobel J.D., 1990). Under the

control of estrogens, the vaginal epithelial state changes greatly in different phases of life, and therefore the vagina is susceptible to infection by different potential pathogens at different age periods , and the potential pathogens with changes in estrogen status during the childbearing age are yeast, Trichomonas vaginalis, and bacteria (Carol A. Spiegel, 1989).

Candidiasis has been known as Moniliasis, yeast infection. Candida albicans is responsible for almost all vaginitis of this type (90%). Trichomonas vaginalis causes 180 million cases per year worldwide (Carol A. Spiegel, 1989). Bacterial vaginosis has also been known as nonspecific vaginitis, Gardnerella (formerly Haemophilus) vaginalis vaginitis, and anaerobic vaginosis, among others. Gardnerella and a mixed, predominantly anaerobic flora predominate in bacterial vaginosis (Blackwell A.L., Fox A.R., Phillips I., 1983), (Spiegel C.A., Amsel R., Eschenbach D.A., 1980). Bacteroides bivius, Bacteroides disiens, and black-pigmented Bacteroides are the most common species of this genus in this setting. Bacteroides fragilis and related gastrointestinal species are rarely found in bacterial vaginosis although they are prominent among the anaerobic bacteria associated with nongonococcal pelvic inflammatory disease (Amsel R., 1983). Peptostreptococcus species, predominantly prevotii and asaccharolyticus, also may be present. Mobiluncus is a newly described genus of anaerobic, gram-variable, curved, motile

organisms. Two species have been described, Mobiluncus curtisii and Mobiluncus mulieris. One or both of these organisms are found in 50 to 80 per cent of women with bacterial vaginosis and less than 5 per cent of normal controls. An alteration in the prevalence of facultative organisms is also seen in bacterial vaginosis. Viridans streptococci (Rabe L.K., Winterscheid K.K., Hillier S.L., 1988) and Mycoplasma hominis (Koutsky L.A., Stamm W.E., Brunham R.C., 1983) are more prevalent, whereas lactobacilli are decreased. The role of viridans streptococci is unknown. Mycoplasma hominis persists in the vagina even after appropriate therapy for bacterial vaginosis and is apparently associated with the persistence of vaginal Bacteroides. While the aetiologic agents of trichomoniasis and yeast vaginitis are known, the agent or agents of bacterial vaginosis have not been identified (Carol A. Spiegel, 1989).

Vaginal discharge is a common presenting symptom and is also frequently seen as an incidental finding in other presentations. It accounts for a large proportion of gynaecological referrals to hospital, with 28% of women attending sexually transmitted diseases (S.T.D.) clinics (Howard L. Kent, 1991), and in the primary care context (Patrick Tatford, 1986). It still remains the problems of diagnosis based on symptomatology, and making for difficulty in the assessment of the need for management and the length to which detailed investigation and treatment should be taken

because of degree, interpretation of any vaginal discharge is subject to wide variation.

The degree of discharge and its effect on the patient varies enormously. The vagina has a normal secretion so that a complete absence of secretion or discharge is itself an abnormality. The normal secretion may become more pronounced under certained conditions and this excess of the normal is worthy of being considered a separate entity as this is helpful in management. The normal and the excessive normal types of secretion, both of which require no investigation or treatment, have to be differentiated from all the forms of vaginal discharge that do require management. Normal secretion may be interpreted as vaginal discharge when it is used to explain other symptoms such as odour (real or imagined) and itching whilst it also may be used as a cover for problems that the woman is not willing to reveal initially. These latter are usually a fear of having contracted venereal disease, a fear of cancer or some sexual problem particularly related to the coitus. Some patients tolerate quite a heavy and persistent discharge without comment and even deny its presence or its giving rise to any symptoms, when examination shows it to be quite profuse. On the other hand many patients complain bitterly of offensive dicharge when examination reveals little discharge and no odor. Moreover, vaginal discharge may be dismissed as a physiologic condition. Concerning the severity of associated

symptoms (e.g., irrigation, soreness, odour, dyspareunia, frequency and urgency of micturition, urge incontinence of urine, or additional symptoms of general discomfort, actual pain, feeling of prolapse or of swelling, pain and soreness related to defecation, . . .), it is commonly difficult to relate the degree of associated symptoms to the vaginal discharge and the problem lies in the fact that it is the associated symptomatology (Patrick Tatford, 1986).

Gynaecologists have experienced the well-known problems of lack of correlation between symptoms of discharge as perceived by the patient, as well as lack of correlation between signs of discharge as detected by the clinician and abnormal laboratory findings. Thus, for diagnosis of vaginal infections physicians have to base on laboratory findings.

Although there are ever-increasing sophisticated diagnostic techniques available, it has been already known that the diagnosis of candidiasis, trichomoniasis, and bacterial vaginosis can be made by wet smears and Gram's stain microscopic examination (J.S.Scott, 1986), (Blackwell A., Barlow D., 1984). The other current method for detection of yeast and Trichomonas vaginalis in the vagina is culture. While culture is more sensitive than microscopy for detection of yeast and Trichomonas vaginalis, it cannot be recommended at this time. Because it is not specific for yeast vaginitis and even if it is more specific than microscopy for detection

of Trichomonas vaginalis (Spence M.R., Hollander D.H., Smith J.L., et al, 1980), (Mc Cann J.S., 1974), it is also expensive, so it is less practical than microscopic examination. Culture is also not specific for bacterial vaginosis, so it is not performed for the diagnosis of bacterial vaginosis (Carol A. Spiegel, 1989).

The other current laboratory tests for detection of Trichomonas vaginalis:

(1). Most authors have agreed that the presence of serum or vaginal antibody is not sensitive or specific enough to be used in diagnosis and will not be discussed further.

(2). Acridine orange is a fluorescent compound that stains nucleic acid. While Fripp P.J., Mason P.R., Super H., (1975) found acridine orange staining more sensitive than a wet-mount for detection of Trichomonas vaginalis, Greenwood and Kirk Hillaire did not (Greenwood J.R., Kirk-Hillaire K., 1981). In addition, performance of this test is limited by access to a fluorescence microscope.

(3). Fluorescein-labeled antitrichomonal antibody (Krieger J.N., Tam M.R., Stevens C.E., 1988), (Smith R.F., 1986) which is more sensitive than wet-mount but not as sensitive as culture. This method is also limited by access to a fluorescence microscope.

(4). A monoclonal antibody with an immunoperoxidase

label has recently become available. Data are not yet widely available, but this method holds promise for the future (Carol A. Spiegel, 1989).

(5). Trichomonas vaginalis may be detected on Papanicolaou (Pap) stains of cervical smears collected for cytological examination. This method is neither sensitive nor specific (Krieger J.N., Tam M.R., Stevens C.E., 1988) and cannot be recommended.

(6). Enzyme immunoassay has been described for detection of trichomonal antigens in vaginal fluid. One such method appeared to be significantly more sensitive than culture. An enzyme immunoassay product is not commercially available at this time, but such a system may become available in the future (Watt R.M., Philip A., Wos S.M., 1986),(Yule A., Gellan M.C.A., Oriel J.D., 1987).

The other current laboratory tests for diagnosis of bacterial vaginosis :

(1). Culture: Theoretically, if specimens were sent to the laboratory for detection of clue cells, fishy odor, and elevated pH, and a diagnosis of bacterial vaginosis were based upon the presence of two or more of these signs, the sensitivity, specificity, and positive and negative predictive values would be 100%, 98%, 91%, and 100%, respectively. However, after appropriate therapy for bacterial vaginosis,

approximately 50% of women will still be culture positive for Gardnerella vaginalis. The value of vaginal cultures is limited due to the large variety of normal bacterial flora. Therefore, culture for Gardnerella vaginalis cannot be recommended either for diagnosis of bacterial vaginosis or as a test-of-cure (Carol A. Spiegel, 1989).

(2). Thin-layer chromatography can be used to detect putrescine and cadaverine, two amines associated with this syndrome (Chen J.C.S., Amsel R., Eschenbach D.A., 1982). This method is more sensitive than the amine odor test, but because it is time-consuming and expensive it is not practical for clinical laboratories.

(3). Trimethylamine has also been associated with this syndrome and can be detected by gas chromatography (Brand J.M., Galask R.P., 1986).

(4). A test for proline aminopeptidase has recently been described as a method for diagnosis of bacterial vaginosis (Thomason J.L., Gelbart S.M., Wilcoski L.M., 1988). When compared with clinical diagnosis, it had a sensitivity of 81% and a specificity of 96% This test will require both further clinical evaluation and the availability of a commercial test product before it will be available for use in clinics and physicians' offices.

(5). Another chemical method uses gas-liquid

chromatographic detection of end products of bacterial metabolism (Spiegel C.A., Amsel R., Eschenbach D.A., 1980).