THE PREDICTIVE VALUE OF CARCINOEMBRYONIC ANTIGEN (CEA) LEVEL IN CERVICOVAGINAL FLUID AND SERUM OF PATIENTS WITH GENITAL HUMAN

PAPILLOMA VIRUS (HPV) INFECTION

THESIS

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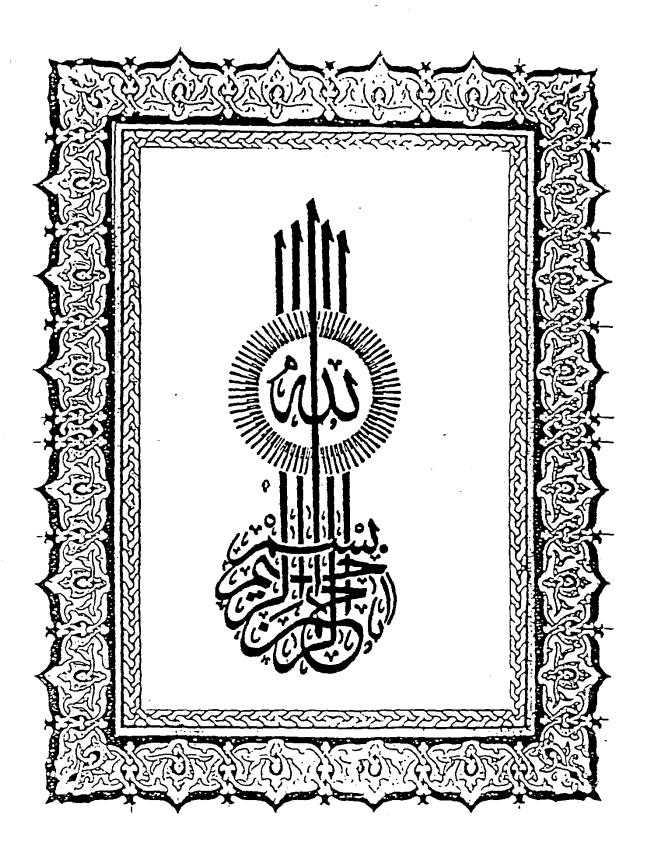
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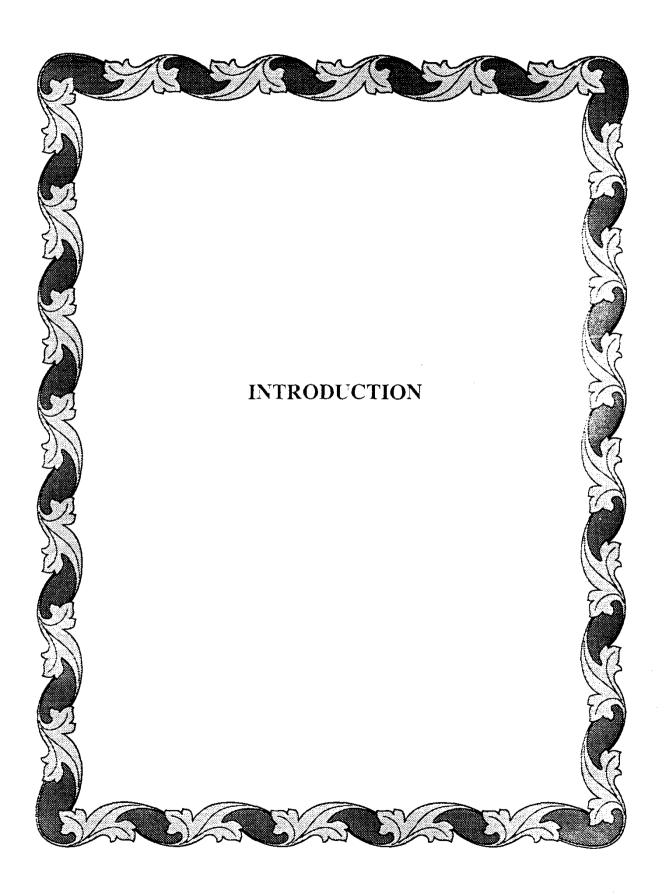
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INTRODUCTION

The sexual revolution of the 1960s has brought about a liberal attitude towards sexual behavior and paved the way for the spectacular increase of venereal diseases, including human papilloma virus (HPV) infections, in the 1980s (Krebs, 1989).

HPV has a prevalence of 10-30% and a transmission rate of 65%, the risk of contracting the virus from sexual contacts with one person may be as high as 7-20% (Krebs, 1989).

HPV infection gives rise to condyloma accuminata, the morphologic appearance of genital warts is similar whether they involve the penis, urethra, perineum, anus, rectum, vulva or vagina; on the cervix, HPV infection gives rise to three appearances: the exophytic condyloma, the flat condyloma (very frequently seen), and the uncommon inverted papilloma (rare).

Cytologic studies using molecular biological techniques suggest that up to 28% of sexually active women harbor genital human papilloma viruses (Schneider et al., 1987).

Thus, there may be well over 30 million women with genital HPV infection in the united states alone; possibly 10 million women or more are carriers of potentially oncogenic viruses (Krebs, 1989).

Zur Hausen (1989) has suggested a sexually transmitted infectious agent (virus) to be a main factor in the causality of cervical cancer. For many years, attention was paid to herpes simplex virus but lately, HPV (especially serotypes 16 and 18) has been the main suspect (Zur Hansen, 1989).

In (1977) Purola and Savia found that 25% of biopsy specimens showing cervical intraepithelial neoplasia (CIN) also had evidence of HPV, Syrjanen et al. (1981) reported the association in 50% and Reid et al. (1982) found nearly 90%.

Human papillomaviral infections are associated with a spectrum of disease, ranging from benign warty proliferation, through varying grades of dysplasia, to microinvasive or even invasive malignancy (Reid, 1984); hence, the importance of the presence of a test to predict oncogenic potential of HPV induced lesions (Reid, 1987).

Rates for HPV 16 or 18, or both, in invasive squamous cell carcinoma ranged from 15.4%-92%, similarly, ranges of 13.8%-83.3% for CIN were recorded (Munoz et al., 1988).

Prevalence studies and annual incidence rates of cervical cancer suggest that up to 3% of HPV - positive women will have cervical cancer in 20 to 50 years (zur Hausen et al., 1989).

Delay in diagnosis of gynecologic malignancy has been suggested as a major cause of poor results. Pathological examinations may be negative especially in the early stages of the disease. So, progress towards an early diagnosis of carcinoma is a welcome development and the need for a rapid screening test is a must, and will contribute to a more favourable outcome of the disease (Nathaneil et al., 1981).

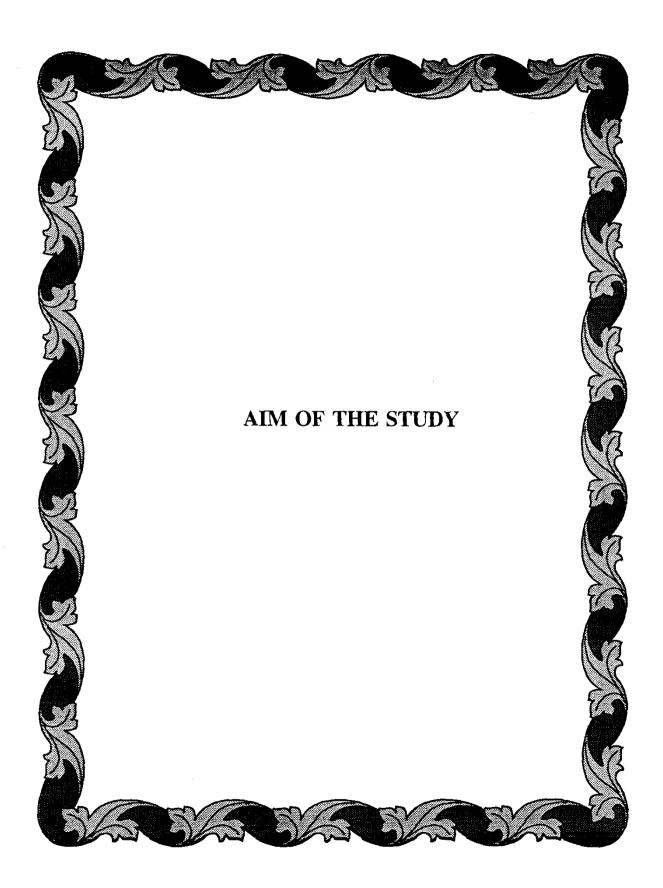
Carcinoembryonic antigen (CEA) is an oncofetal antigen, normally found in the embryonic and fetal gut and sometimes produced by malignant cells. It was discovered in 1965 by Gold and Freedman in patients with adenocarcinoma of the colon (Gold and Freedman, 1965).

It has now been shown to be elevated in patients with many other malignant disorders including breast, lung, and gynecological cancer (Wang et al., 1975).

Elevated CEA levels was also found in a group of non-neoplastic conditions e.g. Obesity, osteo-arthritis, hypertension, heart disease, healthy smokers (Tormey et al., 1982). The upper limit of normal CEA level in the serum is 2.5 ng/ml.; elevations of CEA in nonmalignant diseases are usually under 10 ng/ml. (Lowenstein et al., 1978).

Briese et al. (1989) estimated CEA levels in serum samples and cervicovaginal irrigation fluids in patients with cervical flat condylomas and CIN. Remarkable high concentrations were found in cervicovaginal fluids compared with serum levels. In cases of cervical condylomas and CIN significantly increased CEA levels were determined in fluids compared with the control group. Regarding to CEA serum concentrations, only slight increased values were found in cases of CINI/II.

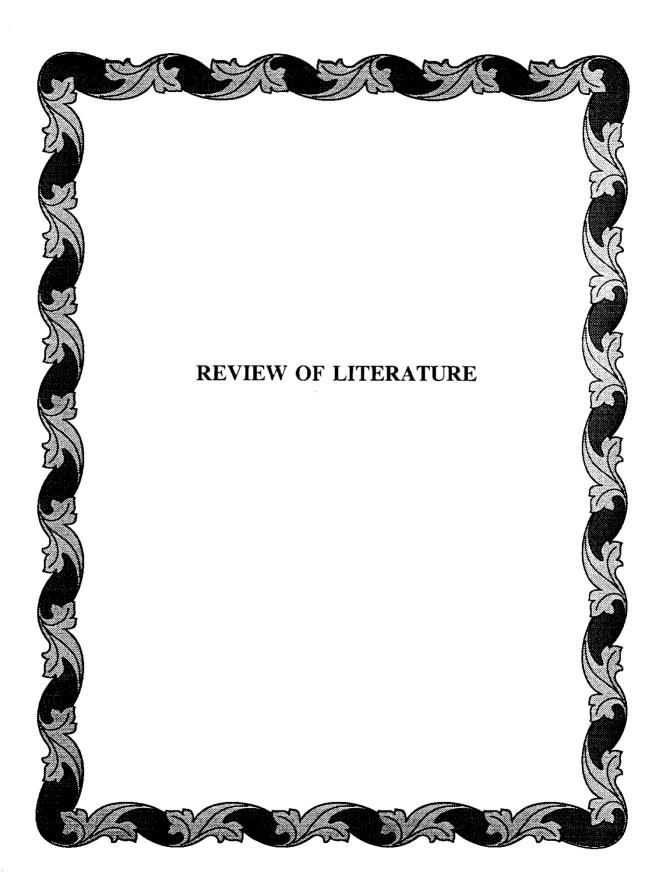
Elevated levels of CEA in premalignant lesions; increasing its importance as a predictive test in detecting HPV induced lesions with oncogenic potential.

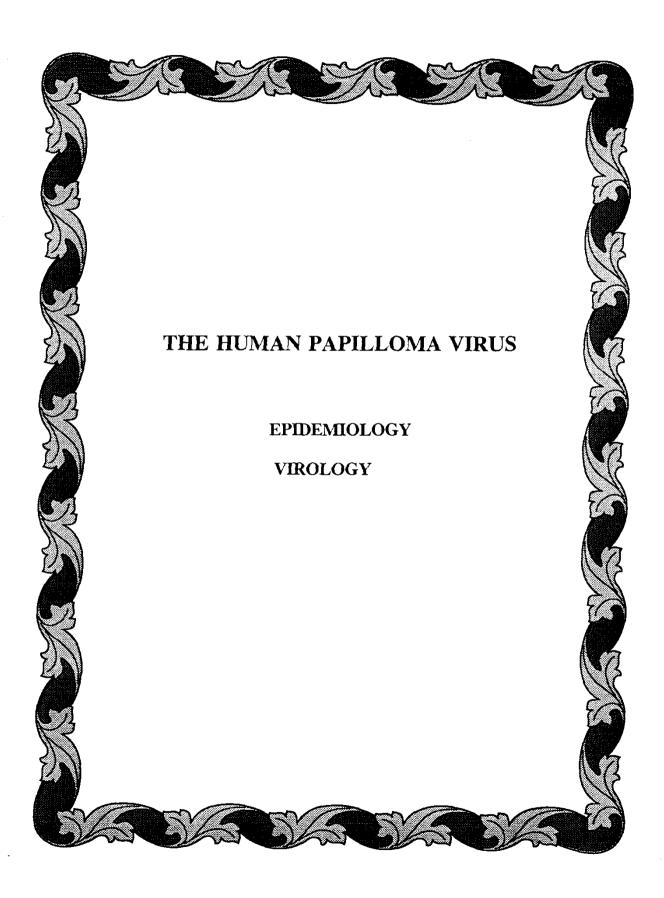


Aim of the study

This study aims to estimate CEA level in the blood and cervicovaginal fluid of patients with HPV infection diagnosed by cytology, colposcopy, and histopathology of cervical directed biopsy and to compare them with the corresponding levels in the control group.

Also, the study aims to compare CEA level in the blood and cervicovaginal fluid of some of these patients before and after treatment.





THE HUMAN PAPILLOMA VIRUS (HPV)

EPIDEMIOLOGY

The Sexual revolution of the 1960S has brought about a liberal attitude towards sexual behavior and paved the way for the spectacular increase of venereal diseases, including HPV infections, in the 1980s. This trend will likely be reversed in the 1990s owing to a change in morals as a response to the burgeoning AIDs epidemic (krebs, 1989).

PREVALENCE:

HPV infection has a prevalence of 10-30% and a transmission rate of 65%, the risk of contracting the virus from sexual contacts with one person may be as high as 7-20% (krebs, 1989).

Hence, there is increasing interest in the epidemiology of HPV infection in unselected population; The prevalence of HPV seems to vary greatly depending on the detection technique used (Griffin et al., 1990), the number of HPV types that are studied (cooper et al., 1991), the type of population studied (kjaer et al., 1990), and the geographic origin of the study population (cooper et al., 1990).