TAJ December 2006; Volume 19 Number 2

ISSN 1019-8555
The Journal of
Teachers Association
RMC, Rajshahi

Original Article

Pap test for Screening of Carcinoma of Cervix: Analysis of one Hundred Patients

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Abstract

During the period of July-2005 to June 2006 a total 100 women under went pap testing in Dinajpur, Bangladesh. The aim of the study was to observe the pattern of histological changes in cervical epithelia among sexually active women in Dinajpur. Results of Pap's test revealed inflammatory changes in 69%, cases, inflammatory with squamous metaplasia in 23% cases, normal 6%, atypia 1% & dyskaryosis in 1% case.

TAJ 2006; 19(2): 76-80

Introduction

The incidence of invasive cervical cancer has decreased by 70% in the last 40 years in large part due to routine use of Papanicolaou (Pap) smear screening. Cervical cancer is the second most common cancer in the women world wide and it is the most principal cancer of the women in most developing countries, where 80% of cases occur[1]. This is preventable disease by screening and treatment of pre-invasive condition. Unfortunately, few developing countries have successful screening programs[2-4]. In developing countries like Bangladesh there is no effective screening program. Risk factors for cervical cancer include early age at first intercourse, history of multiple sexual partners, and smoking [5-8].

The U.S preventive services task force recommends that cervical cancer screening be performed in all women with a cervix who are or have been sexually active. Cervical cancer screening should begin at the onset of sexual activity and should be repeated at least every 3 years[9]. Other groups including the American cancer society, the national cancer institute, the American College of Obstetricians and Gynecologists, the American Academy of Family physician and the American Medical Association recommend annual screening beginning at the age of 18 or the onset of sexual activity[10]. Once three consecutive smears have it been negative, screening may be performed less frequently.

The limitation of traditional cytologic screening remain a source of high rate of false negative results. A meta analysis of 28 studies in which conventional cytology was evaluated for accuracy as a screening test reported a mean sensitive and specificity of 58% and 69% respectively[11].About 95% of women with invasive cervical cancer have evidence of HPV infection [12,15]. Many women with HPV infection, however, never developed cervical cancer, thus this infection is necessary but not sufficient for development of cancer[16].

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Roughly half of the all cervical cancer worldwide contain the oncogenic HPV 16, other important high risk types are HPV 18, 45, and 31[17-18].It was decided to carryout this study for early detection and prevention of carcinoma cervix.

Materials and Method

This descriptive study was carried out at Dinajpur between the periods from July 2005 to June 2006. Total 100 patients were selected for analysis, who under went Pap test and reported to us with the investigation report. A structured questionnaire was completed for each of the patients about their symptoms, obstetric history, menstrual status, personal and sexual history.

Inclusion Criteria for this study

1. Age of the patient more than 20 years.
2. History of early resumption of sexual activity.
3. Excessive per vaginal discharge.
4. History of post coital bleeding.
5. History of post menopausal bleeding.
6. History of vulval or vaginal warts.

Result

Total 100 patients were included in this study. As cervical cancer is a disease of reproductive age and screening should be started at the age of onset of sexual activity & according to the inclusion criteria of the study our patients were more than 20 years of age. Table- I shows age distribution of the patients. 24% were found at the age of 20-24 years & 28% were from the age of 25-29 group. Peak incidence is found in the age group of 25-29 years in our study.

Table-I: Age distribution of the patient (n =100)

Age	Number	%
20-24 years	24	24%
25-29 years	28	28%
30-34 years	22	22%
35-39 years	15	15%
40+ years	11	11%

Table II shows: 45% incidence is found with para 2 & 26% found in para 3. But the peak incidence is found in para 2 group, only 2% from nulliparous.

Table –II: Parity distribution of the patients (n = 100)

Para	Number	%
0	2	2%
1	19	19%
2	45	45%
3	26	26%
4+	8	8%

Graph-I shows 66% of patients having cervical cytology were sexually active since 10-18 year ago. So early resumption of sexual activity especially at the adolescent period has got a direct relationship with Ca cervix. In this study it was found that 70% women started sexual activity before 18 years of age.

Graph-I : Age of onset of sexual activity

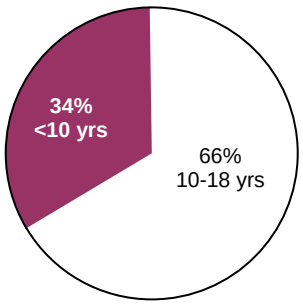

Table III shows only 2% patient found to be atypia and dyskaryosis and and 95% patient were found as inflammatory & inflammatory changes with squamous metaplasia. 6% patients were found with normal report. As we have got no colposcopic investigation facility, suspected patients were sent for colposcopic examination to the higher centre.

Table-III: Report of the Pap's test (n = 100)

Type	Number	%
Inflammatory	69	69%
Inflammatory changes with squamous metaplasia	23	23%
Dyskaryosis	1	1%
Atypia	1	1%

Normal	6	6%

Discussion

This study focused on traditional pap screening method for cervical screening. About 80% of carcinoma of cervix occurs in developing countries[1]. The fear of cancer, due to high incidence in this region of the world in a real threat, therefore focus should be paid make on screening of the cervical cancer. In Bangladesh out of all female cancers 25% of the cancer is carcinoma of the cervix [19-20].

For primary prevention of cervical cancer we must know the etiological factors and how to remove the etiological factors. Various studies done in our country recognized the risk factors of cancer cervix include early age at first marriage, increasing number of marriage. Poor personal hygiene, greater number of pregnancies, early age at first intercourse, and multiple sexual partners of the women, with the later two factors appearing to be most directly related to the recurrence of the disease[21]. A study was carried out at Dhaka Medical College Hospital during the period of August to June'96. From the findings of the study, the sexual factors appeared to be important risk factor while early age of marriage had the greatest risk[22].

It is very important to find out way and means to concentrate on primary prevention and also to establish a national screening program.

Pap smear as a screening test for cervical cancer is widely utilized in the developed countries. This has resulted in earlier detection of asymptomatic cases[23]. But it is very difficult in our country because of selective cervical cancer screening which is done by traditional pap smearing in our country. Almost every case needs to be evaluated by colposcopy and a colposcopy directed biopsy which is not available in many countries.

Analysis of prospective study could not found any case to be reported as cervical intraepithelial neoplasia. Among about hundred cases that has undergone pap smearing only one case was reported as dyskaryosia and one case was reported as atypia. So sensitivity of pap smearing was very low.

There are some limitations of traditional pap smearing method. Most of the time the sample is not properly taken and smearing is faulty. Due to lack of properly trained cytopathologists many a time the report is false negative. So false negative result varies form 15-30%[24].

Newer techniques that employ liquid- based cytology (e.g. thin prep.) have been developed to impress the sensitivity of the screening. As with the Pap test, the optimal studies to determine the sensitivity and specificity of this technology have not been done. Some less than optimal studies show that sensitivity is modestly higher for detecting any degree of cervical intraepithelial neoplasia. With modestly lower specificity[25, 26]. One careful study however showed that conventional pap testing was slightly more sensitive and specific than liquid based cytology[27].

The evidence is also mixed about whether liquid-based techniques improve rate of test adequacy[25, 26]. One advantage of liquid based cytology is that human papilloma virus testing can be done on the same preparation. One disadvantage is that liquid based approaches are more expensive than conventional pap testing. No study has examined whether liquid- based cytology actually reduce the number of women dying of cervical cancer compared with conventional pap testing.

Ideally, cervical cytology should be carried out on or all sexually women but this is impractical. A well organized three yearly screening program is able to decrease the incidence of cervical cancer by over 90%[28]. In developing countries, an extreme paucity of medical services, lack of access to these services and of trained cytotechnicians and laboratories means that the majority of women will never under go a pap smear. WHO recognizes that cytology screening programs are too expensive in developing countries [28].

In this study only 2% cases were found to have cellular atypia and dyskaryosis. More than 50 million Pap smear are performed annually in the United States and about 5% of them are abnormal[29]. In a study of Bangladesh there was

found about 1.8% patient having abnormal pap smear[30].In another study of Bangladesh 1.47% cases were found to have cellular atypia and dyskariosis[24].

In 2005, an estimated 10,370 cases of invasive cervical cancer are expected to occur in the United States, with about 3,710 women dying from this disease[31]. From 1950 to 1970, the incidence and mortality rates of invasive cervical cancer fell impressively by more than 70%. From 1970 to 1999, the same rates decreased by more than 40%[32]. This trend has been attributed largely to screening with the pap test. As sexual intercourse has been established as causal factor for cervical cancer. Human papilloma virus (HPV) infection as sexually transmitted disease has been found to be closely associated with early cancer. The natural history of the progression of HPV infection to cervical cancer is poorly understood [33]. Several HPV viral DNA detection technologies are available, including dot blot hybridization, southern blot hybridization, in situ hybridization, Hybrid capture test and polymerase chair reaction. HPV DNA test is expensive and its incorporation into screening program in Bangladesh would impose an economic burden.

Research has established the viability of visual inspection with acetic acid (VIA) to identify the precancerous lesions[34]. VIA is a sensitive and low cost method and therefore, can be part of screening program in developing countries [35, 36].

In conclusion routine Pap smear screening has markedly reduced the cervical cancer mortality. New technologies such as HPV typing may ultimately be useful in triage of patient for more intensive evaluation. Since the organization of comprehensive cytology screening program has so far proved elusive, consideration may be given to alternate low cost, low technology methods of screening such as VIA (visual inspections of cervix after application of acetic acid).

Acknowledgements

It is my great pleasure to give thanks to RH step, Dinajpur, for collection of sample and keeping and supplying the records necessary for the study.

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