

Study of the risk factors associated with cervical cancer

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ABSTRACT

A total of 120 women were analyzed to find the role of risk factors (non cytogenetic) in cervical carcinogenesis. Each woman under investigation had a clinical history, gynecological examination and pap smear. A cervical biopsy was also taken for histopathology. The frequency of cervical cancer was found to be about 6.6% in the present study. The study revealed high parity and early marriage as predominant non cytogenetic factors in cervical carcinogenesis.

Key words: Cervical carcinoma, Pap smear, parity, risk factors.

INTRODUCTION

Cervical carcinoma is one of the most common gynecologic malignancy world wide and a leading cause of death from genital malignancies. Approximately 5, 00,000 new cases of this cancer are diagnosed worldwide each year with the survival rate of only 40 %¹. In the developing countries cervical carcinoma is ranked second with a relative frequency of 15% of all cancers in women, whereas in the developed countries this cancer is ranked fifth with a relative frequency of 4.4 %². About 1/5 to 1/6 of the total incidence of cervical carcinoma in the world occurs in India³. In India, 365.71 million females above the age of 15 are at the risk of developing cervical cancer. It is estimated that about 132,082 women die due to cervical cancer every year, accounting for 26.7% of the world wide incidence. One woman in India die due to cervical cancer every 7 minutes accounting for more than 200 deaths every day The cumulative risk of the incidence of cervical cancer in women in India (age 0-64 yrs) is 2.4% compared to 1.3% for the world⁴.

Epidemiological studies have shown the high risk Human PapillomaVirus (HPV) to be the most important risk factor and are present in 99.7% of the invasive cervical cancer worldwide⁵. Young age, early marriage, multiple sexual partners, poor genital hygiene, history of abortions, high parity,

tobacco and oral contraceptive use, cigarette smoking, race, low socio economic status have also been identified as significant risk factors for the development of CaCx⁶.

MATERIAL AND METHODS

The present study was conducted in the Department of Gynecology and Obstetrics SMGS Hospital, Government Medical College, Jammu and Human Genetic Research cum Counselling Centre, University of Jammu. Cases were selected from patients having complains of excessive vaginal discharge, post- coital bleeding, post- menopausal bleeding, history of pain in lower abdomen etc. and on per speculum examination with suspected cervical lesion or unhealthy cervix. The patients underwent gynecological examination & biopsy was taken. The histological study of the samples as well as pap smear test was performed by the Department of Pathology, Government Medical College, Jammu.

A structured questionnaire was used to obtain information on occupation, past medical history, smoking and sexual and reproductive factors including age at marriage, age at first issue and parity.

The different clinical lesions were defined as follows:

Erosion Cervix

On examination, there is a bright red area surrounding and extending beyond the external os on the ectocervix, with a clearly demarcated outer edge.

Hypertrophied Cervix

The size of the cervix is enlarged.

Suspicious and Unhealthy cervix

If abnormal growth, ulcer, or vasculature is present, the cervix is clinically diagnosed as unhealthy.

Observations

The cytological findings and histopathological study in the cervical smear of 120 women screened were as follows:

S. No.	Smears	Percentage
1	Normal Smears	70 (58.33 %)
2	Epithelial cellular changes	30 (25.0 %)
	a) Atrophy with inflammation	15 (12.5 %)
	b) Reactive cellular changes Associated with inflammation	23 (19.16 %)
3	Epithelial cellular abnormalities	12 (10 %)
	a) Squamous intraepithelial lesions of cervix (SIL)	4 (3.33 %)
	b) Carcinoma cervix	8 (6.66 %)

The 10 cases of carcinoma cervix comprised of 3 cases at Stage IB, 4 cases at Stage IIA, and 1 case at Stage IV. All the SIL cases were Low grade SIL.

Majority of the females in the present study belonged to age group of 50-69 yrs (Table 1). Incidence of CaCx was found to be common (56.6 %) in the females who were Para three & above, whereas (33.3 %) who were Para two (Table 2). According to the area distribution of these patients, 81.6 % belonged to rural areas and only 10% belonged to urban area (Table 3). Incidence of CaCx was found to be higher in Hindus as compared to Muslims (Table 4). More than 55% of the females under study were married at the age of 21-25 (Table 5). When ages at first issue of these

patients were taken into consideration about 55% of the patients belonged to age group 19-22 and 28.3% belonged to the age group 16-19 (Table 6). Histopathological reports showed 4 cases of Stage IIA, 3 cases of Stage IB & 1 case of Stage IVB (Table 7).

DISCUSSION

Although oncogenic HPV infection has been established as a causative factor of the precursors of cancer cervix as well as their progression to higher grade and eventually to malignancy, there are some other predisposing factors which play a substantive role in the causation and progression of these lesions. We have tried to delineate these risk factors in case of cervical dysplasia and malignancy observed during 8 months cytological screening in 120 women, at SMGS, Government Medical College, Jammu.

Different risk factors associated with the development of cervical carcinoma detected in the present study have been analyzed in detail. The findings are summarized in below:

Maximum numbers of the patients (43.3 %) were in the age group of 50-69 (Table 1). The present findings with respect to age were found consistent with the observations made by Spanos *et al.*⁹, Parkin *et al.*¹⁰, Miller¹¹ and Misra *et al.*¹².

Majority of the patients were multiparous (Table 2). Various workers like Wahi *et al.*¹³, Brinton *et al.*¹⁴, Aras and Pai¹⁵ and Munoz *et al.*¹⁶ also recorded a strong relationship of the risk of cervical carcinoma to the number of live births. Trauma to the cervix during delivery could be the possible explanations but alternative mechanisms that warrant exploration include increased susceptibility to infection through immunosuppression, hormonal influences and dietary deficiencies (Brinton *et al.*¹⁴).

Maximum number of the patients in this study belonged to the rural areas (81.6%) and 10% belonged to urban areas (Table 3). Our findings were consistent with the reports of Coker *et al.*¹⁸, Gajalakshmi and Shanta¹⁹ that the incidence of

Table 1: Patients belonging to different age group

S. No.	Age (in years)	Number of patients	Percentage frequency
1.	20-24	1	0.833%
2	25-29	3	2.5%
3	30-39	30	25.0%
4	40-49	24	20.0%
5	50-69	50	43.3%
6	70-79	1	0.833%
7	80-89	1	0.833%

Table 2: Relation of cervical cytopathologies with parity

S. No	Parity group	Number of cases
1.	Nulliparous	2
2.	Para 1	10
3.	Para 2	40
4.	Para 3 and above	68

Table 3: Number of patients belonging to rural/urban background

S. No.	Area	Number of patients	Percentage
1.	Rural	98	81.6%
2.	Urban	12	10.8%

Table 4: Number of patients belonging to different religions

S. No.	Area	Number of patients	Percentage
1.	Hindu	107	89%
2.	Muslim	3	2.5%
3.	Sikhs	10	8%

Table 5: Relationship of cervical cytopathologies with age at Marriage

S. No.	Area	Number of patients	Percentage
1.	16-20	30	25%
2.	21-25	70	58.3%
3.	26-30	16	13.3%
4.	31-35	4	3.3%

Table 6: Relationship of cervical cytopathologies with age at 1st Issue

S. No.	Area	Number of patients	Percentage
1.	16-19	34	28.33%
2.	19-22	66	55%
3.	22-25	10	8.33%
4.	25-30	11	9.1%

cervical cancer is higher among the patients living in the rural areas. Since the recognized risk factors like illiteracy, low socioeconomic status early menarche, poor genital hygiene is widely prevalent in the rural population (Dutta *et al.* ²⁰)

The incidence of cervical malignancy was significantly lower in Muslims (Table 4). This was in accordance with the study done by Wahi *et al.* ²¹ and Gajalakshmi and Shanta¹⁹ that circumcision as practiced by Muslim could account for the lower incidence of cervical carcinoma as compared to Hindu community.

The frequency of this malignancy was higher in women who were married between 21-25 years (Table 5). These findings were consistent with findings proposed by Misra *et al.* ¹².

55% of women had first issue at the age of 19-22 yrs (Table 6). This was in accordance with the study conducted by Dutta *et al.* ²⁰ Thompson²²

and Varghese²³ that young age at first pregnancy is also a risk factor for CaCx.

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