

Risk Factors in Cancer of Cervix Uteri

Inderjit Kaur and I.P. Singh

Department of Anthropology, University of Delhi, Delhi 110007, India

KEY WORDS Cancer. Cervix uteri. Heredity. Multifactorial Etiology. Herpes Simplex Virus. Histology.

ABSTRACT 180 women histologically diagnosed as patients of Cancer of Cervix uteri were studied to seek an association between Cancer of Cervix and some important factors like age, marital status, educational standard, age at marriage, age at first parity, number of pregnancies, married life span, smoking habit and contraceptive practices. 210 women with normal health and absence of any disease, within the same age group were taken as controls. Significant association has been observed with early marriage, early coitus, low educational standard, early pregnancy, smoking habits and use of condoms, jellies and IUD.

INTRODUCTION

Cancer of Cervix uteri is the most common cancer in Indian women, accounting for 25-40% of all cancers in women seen in hospitals in different parts of India. The annual age adjusted incidence in Indian population is 19.4 to 43.6 per 100,000 (ICMR, 1984). A few studies have reported racial and geographical influences on this cancer incidence (Austen, 1965). It is rare in unmarried women and nuns but prostitutes have a very high incidence of cancer cervix (Frawneni, 1969). Heredity seems to play no role in the causation of this cancer (Rotkin, 1966). Cancer cervix uteri is of multifactorial etiology (Daman, 1960; Hulka, 1982 and Dutta et al., 1990). Important factors like early marriage, early coitus, multiple sexual contacts, repeated childbirth, abortion each may bear some etiological relationship to the cancer of cervix. Another observation is that cancer cervix is more common in lower socioeconomic groups, reflecting the effect of poor hygiene (Murphy et al., 1983 and Saraiya et al., 1990). Recently genital herpes simplex virus (HSV) has been found to be an etiological agent (Seth et al., 1978 and Grahm et al., 1982). Smoking tobacco is another risk factor (Clark et al., 1982).

A few studies have reported the risk factor in cancer of uterine cervix in India (Nawalakh et al., 1977; Roychowdhary, 1978; Saraiya et al., 1983; Jussawalla et al., 1984 and Dutta et al., 1990), especially in the western parts of India no such study is available in literature on North Indian populations. Thus the present study aims at investigating the possible association or lack of association between cancer of cervix uteri and factors like age, education, marital status, age at first marriage, age at first parity, number of parity, married life span, smoking habit and use of contraceptives like condoms, jellies and intrauterine devices (loops, rings and copper T).

MATERIAL AND METHODS

The subjects for this study were 180 women for the Gynaecological wards of Sucheta Kriplani Hospital, Kasturba Gandhi Hospital and Dr. Ram Manohar Lohia Hospital in Delhi, observed between 1987 to 1991. All the patients were confirmed histologically as suffering from the cancer of cervix. Relevant information were collected from the patients by interview method and proformas were filled. For comparison, 210 normal healthy women, free from any specific disease, between the age of 35 to 70, were also interviewed and used as controls.

RESULTS AND DISCUSSION

In the present study, the ages were suitably matched between patients and controls. The majority of the patients (85.6%) and controls (74.3%) were in the age group of 40 to 55 years (Table 1). Patients and controls were also classified according to their educational standard (Table 2) which reveals that 70.0% of the controls had educational standard less than middle school. Relative risk for cancer of cervix uteri among women with educational standard less than middle school was 2.77 times greater compared to those having higher education. Higher literacy rate is often associated with better awareness and personal consciousness including personal hygiene. Significant association was also reported with low education level by Parazzini et al. (1988), Clark et al. (1982) and Dutta et al. (1990).

Table 3 shows that significant association exists (Odd's ratio 2.45) between cancer of uterus and marital status as only 17.77% of patients and 8.09% of the control group were widow, which in turn is associated with the sexual activity as reported earlier also by Damon (1960), Hulka (1982), Dutta et al. (1990) and Murphy et al. (1990).

The distribution of patients and controls according to their age at first marriage is depicted in table 4. It was observed that 67.78% among the patients and 42.86% among the normal were below the age of 17 years at the time of their marriage. The estimated risk for developing cancer of cervix among women getting married before 17 years was double (Odd's ratio 2.1) as compared to women after 17 years. Early marriage rates is a surrogate measure for early coitus or onset of sexual activity and is a risk for developing cancer of cervix uteri. The present findings are in conformity with the findings of Wahi et al. (1972), Roychowdhary (1978), Saraiya et al. (1983) and Dutta et al. (1990).

Among patients 57.78% and among controls 32.86% women attained motherhood before

the age of 18 years (Table 5). The relative risk is more than double (Odd's ratio 2.8) among women who had lower age at first parity which is also reported in some other studies. This may be due to early sexual activity, hormonal changes during pregnancy and cervical trauma during delivery at the relatively young age of mother.

Women who have borne more than three children show 1.48 times more risk for developing this cancer as observed in table 6. Among patients 61.67% and among controls 70.48% were having more than 3 children. It was also observed that women who had longer married life were at a risk 1.3 times more than those who had shorter married life. Table 7 depicts that 73.33% among patients and 78.09% among controls were having married life of more than 25 years.

Patients and controls were divided into two groups, *i.e.* smokers (who smoke bidi, hookah, cigarette, etc.) and non-smokers. It was observed in table 8 that among patients there were more (42.67%) smokers as compared to controls (26.67%). The relative risk was double (Odd's ratio 2.06) for developing cancer of cervix uteri among women who are smokers which was also reported by Clark et al. (1982).

Among the patients, 57.22% were using condoms, jellies and intrauterine device for family planning and 38.57% among the controls were practising these (Table 9). Significant association (Odd's ratio 2.13) has been observed with the use of these contraceptive practices.

In the present study none of the patient had family history of this cancer which depicts that cancer of cervix is not hereditary.

It can be concluded that out of various factors considered in the present study, low literacy status, early age at marriage, early age at parity, longer married life span, smoking habit and use of contraceptives like condom, jellies and intrauterine devices are the significant risk factors in the development of uterine cervix cancer.

Table 1: Age-wise distribution of patients and controls

Age of Years	Patients	Controls
35-40	17	28
41-45	41	49
46-50	42	35
51-55	40	46
56-60	31	26
61-65	4	8
66-70	3	12
71-75	2	6

Table 2: Educational standards-wise distribution of patients and controls

Educational standard	Patients	Controls
<8 Class	126 (70.0%)	96 (45.75%)
>8 Class	54 (30.0%)	114 (54.29%)

Odd's ratio = 2.77, d.f. = 1

Table 3: Distribution of patients and controls according to marital status

Marital Status	Patients	Controls
Widow	32 (17.77%)	17 (8.09%)
Married	148 (82.23%)	193 (91.91%)

Odd's ratio = 2.45, d.f. = 1

Table 4: Distribution of patients and controls according to age of first marriage

Age at Marriage	Patients	Controls
<17 years	122 (67.78%)	90 (42.86%)
>17 years	58 (32.23%)	120 (57.14%)

Odd's ratio = 2.1, d.f. = 1

Table 5: Distribution of patients and controls according to age at first parity

Age at first parity	Patients	Controls
<18 years	104 (57.78%)	69 (32.68%)
>18 years	76 (42.23%)	141 (67.14%)

Odd's ratio = 2.80, d.f. = 1

Table 6: Distribution of patients and controls according to number of parity

No. of children	Patients	Controls
<3	69 (38.33%)	62 (29.52%)
>3	111 (61.67%)	148 (70.48%)

Odd's ratio = 1.48, d.f. = 1

Table 7: Distribution of patients and controls according to married life span

Duration of marriage	Patients	Controls
<25 years	48 (26.67%)	46 (21.91%)
>25 years	132 (73.33%)	164 (78.09%)

Odd's ratio = 1.30, d.f. = 1

Table 8: Distribution of patients and controls according to smoking status

Smoking status	Patients	Controls
Smokers	77 (42.77%)	56 (26.67%)
Non-smokers	103 (57.23%)	154 (73.33%)

Odd's ratio = 2.06, d.f. = 1

Table 9: Distribution of patients and controls according to contraceptive practices

Contraceptive practices	Patients	Controls
Users	103 (57.22%)	81 (38.57%)
Non-users	77 (42.78%)	129 (61.43%)

Odd's ratio = 2.13, d.f. = 1

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