J Obstet Gynecol Ind Vol. 54, No. 6 : November/December 2004 Pg 583-585

Male Factors in Cancer Cervix

Desai *Monali*, Desai *Bhardwaj*
Hematology Oncology Institute, 35 Sampatrao Colony, Alkapuri, Vadodara 390 005.

OBJECTIVE – To identify the male factors which contribute to cervical cancer. **METHODS** – Husbands of patients with histopathologically diagnosed cervical cancer were interviewed and examined in group A. Group B consisted of husbands whose wives had no cervical disease and were matched with cancer cervix patients for female high risk factors. Husbands in group B were interviewed and examined the same way as those in Group A. Statistical analysis was done by Chi square test. **RESULTS** – Seventy six percent of husbands consumed tobacco and 46.3% consumed alcohol in group A vs 51.9% and 18.5% respectively in group B and these differences were statistically significant (p=0.05). Level of education was lower and incidence of multiple sexual partners was higher (18.5%) in group A. 12.7% husbands in group A were circumcised as against 29.6% in group B. This difference is statistically significant (p=0.018). 16.7% and 37% husbands in group A and B respectively used condoms. This difference is also statistically significant (p=0.021). **CONCLUSION** – Male factors such as poor genital hygiene, alcoholism, tobacco use and multiple sexual partners increase the risk of cancer cervix in their female partners. Education, use of condoms and circumcision can help to reduce the risk.

Key words : male factor, condom, cancer cervix

Introduction

Cancer cervix is the most common cancer affecting Indian women. High risk factors which predispose a woman to cancer cervix are well known. An attempt is made to identify the male factors which contribute towards cancer cervix. This would later help in better counseling and screening programs.

Method

Histologically proven 54 cancer cervix patients were taken in the study group A from January 2001 to January 2003. A control group B of 54 patients was identified, who had no evidence of any cervical disease but was matched with group A for their age, religion, socioeconomic status, parity, age at first intercourse and at childbirth, and number of sexual partners. A separate history was taken of the husbands in both the groups and they were clinically examined. Laboratory investigations in the form of urine and penile swab examination were done whenever possible. Due to financial constrains and nonavailability, tests screening for HPV were not possible. The data obtained were ananlyzed and chi square test was used to establish statistical significance.

Results

Table I gives the profile of the patients.

Table II shows the male risk factors which were studied. The mean age was similar in both the groups. Seventy-six percent of husbands in group A and 51.9% in group B consumed tobacco either in the form of smoking or chewing and 46.3% and 18.5% husbands in group A and B respectively consumed alcohol more than twice every week (p=0.05). 55.6% husbands in group A were either illiterate or had only basic schooling. Only 16.7% in both the groups had studied upto postgraduation level. In group B, 55.6% husbands were college graduates.

12.7% husbands in group A were circumcised as against 29.6% in group B (p=0.018). On questioning about multiple sexual partners, it was found that 18.5% husbands in group A and 3.7% husbands in group B had more than one sex partner in their life time. 16.7% and 37% husbands in group A and B respectively used condoms. 11.1% and 1.8% husbands in group A and B respectively had a recent or past history of genital ulcer.

Seven husbands in group A and 16 in group B had undergone circumcision (p=0.021). Poor genital hygiene was seen in 24 of the 85 husbands in the two groups who had not undergone ciricumcision. Swabs were taken from the distal urethra and from external surfaces of the glans / coronal sulcus. It was not possible to get swab culture and sensitivity done of all patients. Out of the 18 swab cultures taken in the circumcision group only four showed growth of mainly gram negative bacteria. Thirty-three of the 70 swabs showed growth in

Paper received on 05/05/2004 ; accepted on 11/11/2004

Correspondence :
Dr. Desai Monali
Hematology Oncology Institute, 35 Sampatrao Colony,
Alkapuri, Vadodara 390 005.
Tel. 0265 2323941 / 2323942 (R)0265 2283298
Email :drmonalidesai@yahoo.com

Table I. Patient profile

Patient particulars	Cancer Cervix	Menstrual disorders
Mean age (years)	39	38
Mean parity (years)	03	03
Mean age at marriage / first intercourse (years)	18	20
Multiple sexual partners	08	06
Condom users	07	05

Table II : Male Factors in Cancer Cervix

Male factors	Cancer cervix	Control
Mean age (years)	42	43
Tobacco use	41 / 54 (76%)	28/54 (51.9%)
Alcohol use	25/54 (46.3%)	10/54 (18.5%)
Education level		
School	30/54 (55.6%)	15/54 (27.7%)
College graduate	15/54 (27.7%)	30/54 (55.6%)
Postgraduate	9/54 (16.7%)	9/54 (16.7%)
Circumcision	7/54 (12.7%)	16/54 (29.6%)
Multiple partners	10/54 (18.5%)	2/54 (3.7%)
Condom users	9/54 (16.7%)	20/54 (37%)
Genital ulcers – recent or past	6/54 (11.1%)	1/54 (1.8%)
HIV positive	3/54 (5.5%)	0/54 (Nil)

Table III

Examination findings	Circumcision		Noncircumcision	
	Group A N = 7	Group B N = 16	Group A N = 47	Group B N = 38
Poor genital hygiene	1	0	20	4
Urinary infection	1	1	12	1
Positive swab culture	2/6	2/12	29/42	4/28
Genital ulcers / lesions	0	0	5	0

the group without circumcision. No husband had genital ulcer / lesion in the circumcision group while there were 5 husbands with genital ulcers in the noncircumcision group with their wives having cancer cervix. HIV screening was possible in only 38 husbands, 28 in group A and 10 in group B. Three husbands were HIV positive in group A.

Discussion

The most common high risk factors for cancer cervix are younger age at first intercourse and child birth, poor genital hygiene, multiple sexual partners and multiparty[1]. The two groups were matched for these factors so as to minimize the influence of female factors in the causation of cancer cervix (Table I). Circumcision is a regular procedure done in muslim males. To remove any religious bias the two groups were also matched for their religion. The incidence of tabacco and alcohol consumption was significantly higher in group A than in group B (p=0.05). Tobacco use is a risk factor for cancer of the penis and cervix viz. cigarete smoking acts as a co-factor which advances HPV infected cervical epithelial cells towards a cancerous condition by reducing the levels of antioxidants in the blood serum which possibly provides some protection[2]. Though these studies are in relation to smoking by the patient, passive smoking is also known to reduce the levels of antioxidants in blood serum making her more vulnerable to disease. Alcoholism leads to high risk behaviors and poor genital hygiene.

Husbands in group B were more educated than those in group A. Genital hygiene is better in educated patients leading to reduced incidence of genital infections. Also educated husbands are more likely to use condoms and visit the doctor more early for infection than uneducated patients[3].

12.7% and 29.6% husbands were circumcised in group A and group B respectively; this is a statistically significant (P=0.018) difference. (Table II). The incidence of poor genital hygiene and urinary and genital infection was significantly higher in the noncircumcised group (p=0.021). Presence of genital ulcer was also more in the noncircumcised group (Table III). Circumcision is associated with a lower risk for penile HPV infection. In addition, among male partners who engaged in high-risk sexual behavior including sex with multiple partners – circumcision is associated with a substantial reduction in cervical cancer risk among their female partners[4,5]. This is probably because circumcision may result in fewer HPV infections since it increases the likelihood of good genital hygiene, and the mucosol lining of the prepuce (a structure removed during circumcision) is not keralinized, possibly providing vaginal viruses more opportunity to infect the male during intercourse.

It is important to emphasize that circumcision itself does not protect against cervical cancer. Rather, circumcision should be considered as a modifying factor, in that it protects against cervical cancer by reducing the prevalence of the principal cause, HPV infection. In other words, in the absence of penile infection with an oncogenic HPV strain, circumcision should have no effect on the female partner's risk of cervical cancer[4].

The incidence of multiple sexual partners was higher in group A (18.5%) compared to that in group B (3.7%). Male promiscuity has been associated with cervical carcinogenesis in countries with high incidences of cervical cancer[5].

The number of condom users were higher in group B (37%) as compared to that in group A (16.7%). This may be due to the fact that the level of education was higher in this group. Condoms are known to prevent all sexually transmitted diseases[3]. Meta - analysis suggests that condom use may reduce the risk of genital warts, CIN II or III, and invasive cervical cancer[5]. HIV positive husbands are likely to infect their female partners. HIV infection itself predisposes a woman to cancer cervix[1,6].

Male factors such as poor genital hygiene, alcoholism, tabacco use, multiple sexual partners and HIV infection increase the risk of cervical cancer in their female partners. Education, use of condoms and circumcision help to reduce the risk of cancer cervix in female partners.

References

1. Shanta V, Krishnamurthi S, Gajalakshmi CK et al. Epidemiology of cancer of the cervix: global and national perspective. *J Ind Med Assoc 2000; 98: 49-52.*
2. Ho GY, Kadish AS, Burk RD et al. HPV 16 and cigarette smoking as risk factors for high-grade cervical intra-epithelial neoplasia. *Int J Cancer 1998; 78: 281-5.*
3. Mohanty J, Mohanty BK. Risk factors in invasive carcinoma of cervix. *J Obstet Gynecol Ind 1991; 41: 403-6.*
4. Kaunitz AM, Xavier C, Xavier F et al. Male circumcision, penile human papilloma virus infection, and cervical cancer in female partners. *N Engl J Med 2002; 346: 1105-12.*
5. Kjaer SK, de Villiers EM, Dahi C et al. Case-control study of risk factors for cervical neoplasia in Denmark. I: Role of the 'male factor' in women with one lifetime sexual partner. *Int J Cancer 1991; 48: 39-44.*
6. Maiman M, Fruchter RG, Guj I et al. Fuman immunodeficiency virus infection and invasive cervical carcinoma. *Cancer 1993; 71: 402-6.*