

A Scenario of Cervical Carcinoma in a Cancer Hospital

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ABSTRACT

Introduction: Cervical carcinoma is an important women's health problem throughout the world. There are very few published data on this disease in Nepal. We wanted to study the pattern of cervical carcinoma based on hospital data.

Methods: A 10 years retrospective study of scenario of cervical carcinoma was conducted. The data have been analyzed according to age, occurrence of other cancers, histological type, religion, risk factors and district wise.

Results: The number of cervical carcinoma showed a rising pattern over the 10 year period. The median age of the patients was 45 years and maximum frequency (33%) of cases were found in the age group 40 to 49 years. Squamous cell carcinoma comprised 40% of cases, Adenocarcinoma 4% and 1.1% cases were of mixed variety. 92% of cases were Hindu by religion. 43% of patients were smoker in our study, 5% had positive family history. Chitwan with 7.35% had the maximum number of cases followed by Rupandehi with 6.40% and Nawalparasi with 5.41%.

Conclusions: The cancer pattern revealed by the present study provides valuable leads to cervical cancer epidemiology in Nepal. Routine cytological screening of the population for cervical cancer is highly necessary for its early detection and treatment.

Key Words: *Cervical carcinoma, hospital based study, Nepal, pattern*

INTRODUCTION

Worldwide, cervical carcinoma is second only to breast carcinoma in both incidence and mortality. It accounts 6% of all malignancies in women, thus remaining as one of the greatest killer worldwide. More than 471,000 new cases are diagnosed each year, predominantly among the economically disadvantaged in both developing and industrialized nations.¹

The American Cancer Society estimates that in 2009, about 11,270 cases of invasive cervical cancer will be diagnosed in the United States. About 4,070 women will die from cervical cancer in the United States during 2009. During 2004 there were 2,221 new cases of invasive cervical cancer diagnosed in England. It caused 899 deaths in UK in 2004.²

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Total 42% of the population is below the poverty line indicating poor health in Nepal.³

METHODS

A retrospective study was conducted by reviewing the medical records of the inpatient and outpatient department of BPKMCH, from January 1999 to December 2008 (total of ten year period). Institutional approval was taken. Pattern of cervical cancer at BPKMCH was analyzed according to age, occurrence of other cancers, histological type, religion, risk factors, and district wise distribution.

Total of 3372 cases of cervical carcinoma were studied. The cases identified include all invasive cancers in ICD C53 category; in situ carcinoma and precancerous lesions were excluded from the study. Duplicate cases were eliminated by crosschecking name, address, age and hospital number of each patient. Data were entered and relative frequencies were analyzed by using Statistical Package for Social Sciences (SPSS) version 13 for Windows.

RESULTS

Out of 11,469 cases diagnosed as cancer, 3372 cases (29%) were cervical carcinoma. Total number of cases showed a rising pattern over the ten year period (Table 1).

In our series we had a spectrum of patients ranging from eight to 83 years of age. Median age of the patients was 45 years. Maximum frequency 1112 cases (33%) were found in the age group 40 – 49 years. Nine hundred and forty four cases (28%) were found in the age group 50 – 59 years. The age group of less than 30 and more than 70 had the least number of cases 337 (10%). Almost all cases were malignancy of the primary site (Table 2).

According to the histological type 1348 (40%) of cases were squamous cell carcinoma. One hundred and thirty four (4%) cases were adenocarcinoma (Table 3). And 37 (1.1%) cases were of mixed variety. Unfortunately, there was no histological classification obtained of 1820 (54%) cases.

Among all ethnicity total 3102 patients (92%) were Hindu (Table 4). One hundred and twenty four patients (3.7%) were Buddhist. Seventy nine patients (2.36%) were Muslim. Thirteen patients (0.4%) were Christian. Thirteen patients (0.4%) belonged to other religions.

In our study 43% of the patients were smoker. Among them 18% were regular smokers. There was positive family history in 5% of patients. 11% of patients were alcoholic. Total 10% patients had associated

hypertension and 3.3% of patients had associated Diabetes.

Cases were distributed according to different districts from where they originally came from (Table 5). It was seen that maximum of 247 cases (7.35%) came from central region district Chitwan. Western region districts of Rupandehi and Nawalparasi had 215 (6.40%) and 182 (5.41%) cases respectively. Eastern region districts of Morang and Sunsari had 133 (3.97%) and 130 (3.87%) cases respectively.

Table 1. Occurrence of Cervical Cancer among other cancer

Year	Total number of cancer	Cervical Cancer	Percentage Cervical Cancer alone
1999	460	109	23
2000	520	180	34
2001	753	212	28
2002	914	267	29
2003	1079	358	33
2004	1054	333	31
2005	1701	495	29
2006	1556	458	29
2007	1829	532	29
2008	1603	428	26
Total cases	11,469	3,372	29

Table 2. Age-wise Distribution of cases

Age group	Total cases (%)
< 30	110 (3)
30 - 39	472 (14)
40 - 49	1112 (33)
50 - 59	944 (28)
60 - 69	505 (15)
> 70	227 (9)

Table 3. Distribution according to Histological type

Histological type	Total cases (%)
Squamous cell carcinoma	1348 (40)
Adenocarcinoma	134 (4)
Mixed	37 (1.1)
Not classified	1820 (54)

Table 4. Distribution according to Religion

Religion	Total cases (%)
Hindu	3102 (92)
Buddhist	124 (3.7)
Islam	79 (2.36)
Christain	13 (0.4)
Others	13 (0.4)

Table 5. Top five districts with cervical carcinoma

District	Cases
Chitwan	247 (7.35)
Rupandehi	215 (6.40)
Nawalparasi	182 (5.41)
Morang	133 (3.97)
Sunsari	130 (3.87)

DISCUSSION

To assess the cervical carcinoma pattern, we analyzed 3372 cases of cervical carcinoma diagnosed at BPKMCH over ten years period from January 1999 to December 2008. Total number of cases showed a rising pattern over the ten year period. This is in sharp contrast to the US and other western countries where there has been decreasing trend over the past few years. The cervical cancer death rate declined by 74% between 1955 and 1992 in the US. In UK, cervical cancer rates in 2004 (2.8 per 100,000 females) were more than 60% lower than they were in 1975 (7.5 per 100,000 females). The main reason for this change is increased use of the Pap test for cervical screening. In UK too, this decline has been due to the introduction of the National Health Service cervical screening program in 1987.⁴ One analysis of mortality trends before and after the introduction of screening in the UK concluded that screening prevented an epidemic of cervical cancer and that the program is likely to prevent approximately 5000 deaths per year (in financial terms, saving of about 36,000 pounds per life).⁵ Unfortunately in Nepal there is no routine screening for cervical cancer. Nepal, due to its diversity of terrain, which is quite inaccessible at times, and limited medical facilities, still faces difficulties in the implementation of extensively reaching health programs. There is also lack of accurate medical documentation which hinders proper health planning.

Cervical carcinoma commonly occurs between the ages of 31 to 70 years with the peak in 41 to 50 years age brackets.⁶ It rarely develops in women younger than 20. In our study too maximum frequency 1112 cases (33%) were found in the age group 40 to 49 years, with most patients falling within 30 to 70 years age group. Though patients ranging from 8 to 83 years were

also found. Almost all cases were malignancies of the primary site, though few cases of secondary metastasis were also found.

Histologically, cervical carcinoma is subdivided into squamous cell carcinoma, adenocarcinoma and mixed variety. Squamous cell carcinoma forms about 60 to 80% of invasive cervical carcinoma.⁷ According to WHO, it is further subdivided into keratinizing and non-keratinizing, Verrucous, Warty (Condylomatous), Papillary squamous cell (transitional), and Lymphoepithelioma-like carcinoma. Adenocarcinoma constitutes about 5-15% of all invasive cervical carcinomas⁸ with an increasing trend particularly in young females.^{9,10} The three most common histological types of cervical carcinoma are the mucinous, endometroid and clear cell types. Mixed variety constitutes about 15% of cervical carcinoma with subtypes like adenosquamous, adenoid cystic, neuroendocrine and undifferentiated carcinoma. In our study only 1348 (40%) cases were squamous cell carcinoma, 134 (4%) cases were adenocarcinoma and 37 (1.1%) cases fell under mixed variety. This was largely due to the fact that there was no histological classification obtained of 1820 (54%) cases.

There is not any data to suggest that cervical carcinoma incidence varies with the religion. Three thousand one hundred and two patients (92%) diagnosed as cervical carcinoma were Hindu is largely due to the fact that Nepal is a Hindu country. By religion the population of Nepal is predominantly Hindu at 80% followed by Buddhist at 10.7% and Muslim 4.2%.

HPV infection and sexual activity are the most important risk factors in the pathogenesis of cervical carcinoma. It is now widely accepted that both squamous cell carcinoma and adenocarcinoma of cervix as well as their pre-cursor lesions are caused by specific HPV that infects the genital tract. Human papilloma virus subtype 6 and 11 cause benign lesion such as flat condyloma and mild dysplasia whereas HPV 16, 18 and 31 called "oncogenic viruses" are implicated in high-grade dysplasia (CIN II and III) and squamous cell carcinoma as well as endocervical carcinoma.¹¹ Beside HPV infection other major risk factors are early age at initiation at sexual activity, having multiple sexual partners, history of HIV infection and other sexually transmitted diseases, cigarette smoking, lower socioeconomic status, immunosuppression etc. Unfortunately in our study there is not any data regarding the association of HPV infection. Therefore a comprehensive assessment of association of HPV infection with cervical carcinoma is warranted in our setup. 43% of patients were smoker in our study which supports the association of smoking with cervical carcinoma. Most of the patients were farmers by occupation and most were illiterate in our study, which supports that cervical carcinoma mostly

exists in lower socioeconomic population. There was positive family history in 5% of patients in our study. But there is not enough data to suggest the familial origin of cervical carcinoma.

Cases were distributed according to different geographic areas from which the patients originally came from. It was seen that maximum number of cases came from central region district Chitwan 247 cases (7.35%). Western region districts of Rupandehi and Nawalparasi had 215 (6.40%) and 182 (5.41%) cases respectively. This can also be attributed to the fact that the hospital where from this study was done is situated in Chitwan district which is near to Rupandehi and Nawalparasi district. Eastern region districts of Morang and Sunsari had 133 (3.97%) and 130 (3.87%) cases respectively.

There was also significant number of cases from Parsa, Jhapa, Kaski, Bara, Kathmandu and even India.

CONCLUSIONS

In conclusion, the cancer pattern revealed by the present study provides valuable information about the state of cervical carcinoma in Nepal. The number of cervical carcinoma cases is on the rise in Nepal. Efforts should be geared towards mass education about the cause of the disease. Routine cytological screening of the population for cervical cancer is highly necessary as early detection and treatment of cancers will go a long way reducing the mortality and morbidity of the disease.

REFERENCES

1. Consensus statement. National Institutes of Health Consensus Development Conference Statement on Cervical Cancer. *Gynecol Oncol.* 1997;66:351-61.
2. NHS Cervical Screening Program. [Online]. [cited Mar 2009]. Available from: URL: <http://www.cancerscreening.nhs.uk/cervical/>
3. Binu VS, Chandrashekhara TS, Subba SH, et al. Cancer pattern in western Nepal: a hospital based retrospective study. *Asian Pacific J Cancer Prev.* 2007;8(2):183-6.
4. Cancer Research UK. UK Cervical Cancer mortality statistics [Online]. September 2008 [cited Mar 2009]. Available from: URL: <http://info.cancerresearchuk.org/cancerstats/types/cervix/mortality/>
5. Peto J, Gilham C, Fletcher O, et al. The cervical cancer epidemic that screening has prevented in the UK. *Lancet* 2004 Jul;364(9430):249-56.
6. Abuda EK, Banjo AA, Izebu MC, et al. Histopathological pattern of carcinoma of cervix in Olabisi Onabanjo University Teaching Hospital, Sagamu, Nigeria. *Nig Q J Hosp Med.* 2006;16:80-4.
7. Wright TC, Ferenczy A, Kurman RJ. Carcinoma of cervix and other tumors of the cervix. In: Kurman RJ, editor. *Blaustein's pathology of the female genital tract*. 4th ed. New York: Springer Verlag; 1994. p.279-326.
8. Rosai J. *Ackerman's Surgical Pathology*. 8th ed. New York: Mosby; 1996. p.1368.
9. Wilczynski SP, Walker J, Liao S et al. Adenocarcinoma of cervix associated with human papillomavirus cancer. *Cancer* 1988;62:1331-6.
10. Kjaer SK, Brinton LA. Adenocarcinoma of the cervix: the epidemiology of an increasing problem. *Epidemiol Rev.* 1993;15:486-98.
11. Wright TC, Ferenczy A, Kurman RJ. Carcinoma of cervix and other tumors of the cervix. In: Kurman RJ, editor. *Blaustein's pathology of the female genital tract*. 4th ed. New York: Springer Verlag; 1994. p. 975.