J. Dhaka National Med. Coll. Hos. 2022; 28 (02): 11-16

Original Article

Pattern of Fertility in Women of Reproductive Age Suffering from Cervical Cancer

Taslima Rahman[1], kartick chanda shaha[2], Abu Bakar Siddique[3], Tanvir Ahmed[4], Manzila Manzur[5]

[1]Assistant Professor, Department of Community Medicine, International Medical College, Tongi, Gazipur, [2]Assistant Professor, Department of Pharmacology, Dhaka National Medical College, Dhaka, [3]Indoor Medical Officer, Department of Cardiology, Dhaka Medical College, Dhaka, [4]Medical officer, Department of Medicine, Islami Bank Hospital. Kakrail, Dhaka, [5]Assistant Professor, Department of Community Medicine, International Nursing College, Tongi, Gazipur.

Abstract

Background: Cervical cancer is the most common malignancy of female genital tract in Bangladesh. Though with proper screening and risk factor modification it can be prevented easily.

Objective: The major objective of the study was to find out fertility pattern in women of reproductive age group suffering from cervical cancer.

Methods: This cross sectional study was carried out in National Institute of Cancer Research and Hospital, Mohakhali, Dhaka during the period of January 2016 to December 2016. The study was performed among 105 diagnosed female patients suffering from cervical cancer available during the data collection period in the study place. Data were collected by face-to-face interview with a questionnaire and with a check list.

Results: It was found that majority of the respondents (54%) were within the age range of 46 to 50 years. Ninety percent of the respondents were found to be currently married and majority of them (86.9%) were Muslim. About 39% of the respondents were illiterate and 31% of them had primary level education.Majority of the respondents (70%) were housewife by profession and 8.6% were service holders. The monthly family income was Tk. 14247±4360. About 70% of the respondents were found to practice of different types of contraceptive methods, the most commonly used method was oral pill (73%). Mean age at menarche was 13 years and the mean age at first marriage was 15.5 years. Mean age at first childbirth of the respondents was 15.62 years. Majority of respondents were multipara and 48% of them had conceived for 3 to 4 times. Maximum proportion (48.6%) of cervical cancer patients were in grade III. Next higher group 25.7% was in grade II, 15% were at grade I and 10% were at grade IV. 55.2% of the patients had squamous cell carcinoma, 22.9% had adenocarcinoma and only 21.9%, had adenosquamous carcinoma.

Conclusion: Study showed that women who had early marriage and experience their 1st pregnancy at a young age, multiple and repeated pregnancies are at an increased risk of cervical cancer. Screening women for pre cancerous changes and treating the abnormal tissue seems to protect women from developing cervical cancer. If those factors are avoided there could be safe guarded in a significant proportion.

Keywords: Fertility, Reproductive age, Cervical cancer.

Introduction

Cervical cancer is the fourth most common cancer among the women globally with an estimated 604000 new cases and 342000 deaths in 2020, 90% of which occur in developing countries.[1] In developing countries mortality rates are reported 11.2 per 1,00000 women on average, almost three times the rate of developed countries.[2] Cervical cancer is preventable and curable when detected at an early stage. 5 year survival rate of cervical cancer when detected at an early stage is 92% and the combined 5 year survival rate for all stage is 71%.[3]

Cervical cancer is an important reproductive health problem in Bangladesh. It is the most common malignancy of female genital tract in Bangladesh. Cervical cancer constitutes 12% of all cancer cases in

women in Bangladesh.[4] More than 80% of patients diagnosed with this eminently preventable cancer present in clinically advanced, inoperable stages.[5] Most of the cancer patients in Bangladesh usually attend in the hospital in an advanced stage, resulting in decrease survival and increase morbidity and mortality rate. So it can be said that as one of the rapidly becoming growing public health problem causing a good number health and economic loss of the community and the country as a whole.

Present study was designed to ascertain some risk factors such as early marriage, early age at first pregnancy, too many and repeated childbirth have been associated with the increasing risk of the carcinoma cervix. The natural history of cervical cancer is such that it seems to follow as progressive course from epithelial dysplasia to carcinoma in situ to invasive carcinoma. Fortunately, it is possible to detect it early during a pre-invasive curable stage by the Pap smear test and VIA test to take measures to prevent it from progressing into alifethreatening illness.

The result of the study may guide us whether immediate necessary steps are to be taken by the government for the prevention of the spread of this dreadful disease by giving emphasis on avoiding early marriage, early child birth, multiple pregnancies, improvement of socio-economic condition, proper health education as well as by simple measure like pap smear screening. Deaths associated with cervical cancer are the most telling indicator of the disease's impact on women, their families, and their communities. A mother's death dramatically compromises the health of a family, especially the health of children. These deaths are avoidable, however. With timely screening and appropriate treatment, deaths from cervical cancer can be greatly reduced.The aim of the study is to identify some risk factors of cervical cancer which may help to diagnose this life threatening disease at an early stage via screening test and thus give early treatment.

Methodology

This descriptive type of cross sectional study was conducted to assess the correlation between some fertility related factors and the risk of developing cervical cancer in National Institute of cancer research and hospital. This place was selected purposively for it provides integrated treatment facilities both indoor and outdoor services. According to the study objectives the study was designed with description of knowledge related factors. The study period was January to December 2016and Total of 105 women who are diagnosed case of ca cervix between 15-49 years of age were taken as study population. Prior to data collection a semi structured pre-testedquestionnaire prepared based on the objectives of the study. Respondents were selected purposively and data was collected by faceto face interview. The respondents were informed about their full right to participate or refuse to participate in the study. After collection of data, entry and analysis such as frequencies, percent were done by the software SPSS (version 23).

Results

Out of 105 respondents, majority of the women (53.2%) were of 46-50 years and only 02 (1.9%) belongs 30-35 years age group. Out of 105 respondents 41 (39%) women were illiterate and the rest are educated. Most of the respondents were house-wives 73 (69.5%) followed by 32 (30%) were various type of service holder. Monthly family income of majority women 102(97.1%) was taka 1,0000-20000 taka (low socio economic background) and few of them 03(2.9%) had 20000-30000 taka (middle socio economic status). (Table-I)

The majority i.e. 77% were married when their ages between 14-17 years, 17% got married between the age of 18-21 years and very few i.e. 6% did so at the age of 22-25 years. Asked about the duration of conjugal life, majority i.e. 51% led 21-30 years of married life followed by 37% led 31-40 years, 9% led 11-20 years and 3% led 5-10 years. Among the respondents almost 73(69.5%) had regular menstrual cycle while 32(30.5%) of them gave the history of irregular cycle. About 91% of respondents had history of MR and 9% had no history of MR. About 71% of respondents had history of abortion and 29% had no history of abortion. Among them 74(70.5%) used different methods of contraceptive. Majority i.e. 54 (73%) used oral pill followed by 9(12.2%) used copper-T and 7(9.5%) used injectable contraceptive, only 4(5.4%) used barrier method and 31(29.5%) had no history of contraceptive used. Among the respondents majority i.e 45(47.9%) conceived 3-4 times in their life followed by 39(41.5%) conceived 5-6 times and 10(10.6%) conceived 1-2 times. So mean + (SD=3.64+ (1.10). 105 respondents 65(69.1%) had 3-4 no. of children followed by 16(17%) had 5-6 no. of children and 13(13.8%) had 1-2 no of children. (Table-II)

Among the respondents about 98(93.3%) had history of cervical infection and 7(6.7%) had no history of cervical infection. About 58(55.2%) of respondents had squamous cell ca, 24(22.9%) of respondents had adenocarcinoma and 23(21.9%) had adenosquamous carcinoma.Majority of the respondents about 51(48.6%) had in grade III, followed by 27(25.7%) had in grade II, 16(15.2%) had in grade I and 11(10.5%) had in grade IV. (Table-III)

The study showed relationship between cancer types with obstetrical and gynaecological factors. There was also association of cervical cancer types with the number of conception of the respondents. But MR and abortion has no significant association between the type of cervical cancer. (Table-IV)

Table-I: Socio-demographic variables of the respondents (n=105)

Age-group (years)	Respondents (%)
30-35	02 (1.9)
36-40	18 (17.1)
41-45	29 (27.6)
46-50	56 (53.3)

Education of the women	
Non educated	41(39%)
Educated	64(60%)
Occupation of the women	
Housewife	73(69.5%)
Various type of service holder	32 (33%)
Income	
Lower income (10000-20000)	102 (97.1%)
Middle income (20001-30000)	03 (2.9%)
Age at Marriage (Years)	
14-17	77 (77%)
18-21	17 (17%)
22-25	6 (6%)
Duration of Married Life	
5-10	3 (3%)
11-20	9 (9%)
21-30	51 (51%)
31-40	37 (37%)

Table II: Reproductive variables of the respondents (n=105)

Reproductive variables	Frequency
Menstrual Cycle	
Regular	73 (69.5%)
Irregular	32 (30.5%)
History of MR	
Yes	91 %
no	9 %
History of Abortion	
yes	71%
no	29%

Delivery Conducted by	Frequency
Doctor	27 (28.4%)
Nurse	08 (8.4%)
Midwife	51 (53.7%)
Untrained Dai	09 (9.5%)
Types of delivery	**Frequency**
Normal	66 (69.5%)
Caesarean	22 (23.2%)
Instrumental	07(7.3%)
Birth Injury	**Frequency**
Yes	46(43.8%)
No	59(56.2%)
Contraceptive use	**Frequency**
Yes	74 (70.5%)
No	31(29.5%)
Type of contraceptive	**Frequency**
Oral pill	54 (73%)
Condom	04 (5.4%)
Copper T	09 (12.2%)
Injection	07 (9.5%)
Duration of contraceptive use	**Frequency**
3-6	47(63.5%)
7-10	26(35.1%)
11-14	01(1.4%)
Number of Conceive	**Frequency**
1-2	10(10.6%)
3-4	45(47.9%)
5-6	39(41.5%)
Number of children	**Frequency**
1-2	13 (13.8%)
3-4	65 (69.1%)
5-6	16 (17%)

Table-III: Types and staging of cervical cancer (n=105)

Variables	Frequency
Cervical infection	
Yes	98 (93.7%)
No	07 (6.7%)
Histopathological type	**Frequency**
Squamous cell carcinoma	58 (55.2%)
Adeno carcinoma	24 (22.9%)
Adeno squamous carcinoma	23 (21.9%)
Stage of cancer	**Frequency**
Grade I	16 (15.2%)
Grade II	27 (25.7%)
Grade III	51 (48.6%)
Grade IV	11 (10.5%)

Table-IV: Association between cancer types with obstetrical and gynaecological variable (n=105)

	Cancer types			P-value
No of conceive	Sq cell ca	Adeno ca	Adeno sq ca	
1-2	4 (40.0%)	2(20.0%)	4(40%)	
3-4	24(53.3%)	9(20.1%)	12(26.7%)	P=0.042*
5-6	21(53.8%)	12(30.8%)	6(15.4%)	
MR				
Yes	4(40.0%)	4(40.0%)	2(20.0%)	P= 0.038
No	54(56.8%)	20(21.1%)	21(22.1%)	
Abortion				
Yes	19(63.3%)	7(23.3%)	4(13.3%)	P=0.385
No	39(52%)	17(22.7%)	19(25.3%)	

Discussion

The current study was under taken to find out some factors associated with ca cervix, as well as to observe the fertility pattern of the women suffering from cancer cervix. In this study among 105 respondents more than half of the patients (54%) suffering from cervical cancer were within the age range of 46 to 50 years, with mean age of 44.72 ±3.84 years. These findings agree with the findings of the study done in abroad that showed the maximum age group of cancer cervix patients are within 40-50 years. 660% of the respondents were educated. In a study about 23% of total respondents were illiterate and 63% had secondary education.[7] Study showed that about 90.5% respondents were housewife which is almost consistent with this study.[5,6] The median monthly family income of the respondents was found to be (14247 tk ± 4360). And 97.1% of the respondents monthly income was between 10000-20000tk. Above data are consistent with the various studies.[8-10,13,16] Age at first marriage there by age at first coitus is recognized as a major risk factor for cervical cancer.[11] The mean age at first marriage of the respondents was 13.54 years, 60% of the respondents were married between 10-14 years. It supports the finding of the study which showed that marriage earlier than 17 years are at particularly high risk of developing cervical cancer.[11,12,16] It is also consistent with another study.[12-14,16] In a case control study revealed that patients who experience inter course at the age before 20 years the relative risk of developing, carcinomas in situ (CIS) was 2.55 times higher than that of women who were exposed to sexual activity at 21 years or earlier.[15] The mean age at first child birth of the respondents was found to be 15.62 years minimum and maximum ages were 13 and 24 years respectively, More than 90% of the respondents had their first child before the age of 20 years. The findings are consistent with the findings of Kumar V where majority was within age group of16-19 years.[14]

Among the respondents 48% had 3-4 parity and 42% had 5-6 parities. It indicates that multiple parity had an impact on fertility. This statement also consistant with other study where it has been seen an impact on fertility. This statement also consistant with other study where it has been seen that risk of cervical carcinoma increased with number of births.[17]

Almost 91% respondents had performed MR and 71% had at least experience of one abortion. This finding has similarity with the study which showed that risk increased to 2.2 for women who had undergone 2 or more abortions compared within women who had never had one abortion.[18]

In this study a greater number (70%) of respondents were contraceptive users. About 73% responded used oral pill only. Mean duration of use of contraceptives by respondents was 3-6 years. None of the respondent's husbands used condom for contraception. The finding are similar to the study that long term oral contraceptive uses were found to be at increased risk of carcinoma in situ. Woman with more than 6 years of oral contraceptive use had an adjusted relative risk of 2.3 compared with never users.[19] The present study finding about no use of condom is supported by the study done by Barry A in Denmark that most significant risk determination of cervical neoplasia were history of non use of Condom and also risk of infection with

human papilloma virus (the potential carcinogenic virus) from male partner.[18] Most (94%) of the respondents encountered cervicitis. Three histopathological type of carcinoma was found among the respondents. 55% of the respondents had squamous cell carcinoma, 23% had adeno carcinoma and only 21% had adeno squamous carcinoma. According to a study showed that 89.19% were squamous cell carcinoma and 5.68% were adeno carcinoma, which is consistent with the current study.[20] Almost half (49%) of the respondents were diagnosed as ca cervix Grade III. About 40% of the respondents were diagnosed 4-6 months after initial signs and symptoms. 23% were diagnosed after 1-3 months and another 23% were established 7-12 months after the initial problem.

Conclusion

Study showed that women who had early marriage and experience their first pregnancy at a young age, multiple and repeated pregnancies are at an increased risk of cervical cancer. Screening women for pre cancerous changes and treating the abnormal tissue seems to protect women from developing cervical cancer. If those factors are avoided there could be safe guarded in a significant proportion. Screening practices can preferentially be directed to the target population for optimal utilization of resources. Specific awareness programmes, health education, promotion of condom uses, and need to follow healthy hygienic practices is the most easiest approach in reducing the incidence of cervical carcinoma in resource crunched societies like Bangladesh. Cervical cancer control activities included in the existing reproductive and child health programme. As cervical cancer is one of the most common cancers among the women in most of the developing countries, substantial measures need to be taken to address such a situation.

References

1. Sung H, Ferlay J, Siegel RL, Laversanne M, Soerjomataram I, Jemal A, et al. Global cancer statistics 2020: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. CA Cancer J Clin. 2021:71:209–49
2. Ferlay J, Shin HR, Bray F, Forman D, Mathers C, Parkin DM. Cancer incidence and mortality worldwide. 2010:127:893-917
3. American Cancer Society. Cancer facts and figures. 2013:Atalanta, Ga:American Cancer Society.
4. Ferlay J, Colombet M, Soerjomataram I, Mathers C, Parkin DM, Piñeros M, Znaor A, Bray F. Estimating the global cancer incidence and mortality in 2018: GLOBOCAN sources and methods. Int J Cancer. 2019 Apr 15;144(8):1941-1953.
5. Munoz N, Bosch FX, Sanjose DS, Herrero R, Castellsague X,et al. Epidemiologic classification of human papilloma virus types associated with cervical cancer. N Engl J Med. 2003; 384: 518-60.
6. Johnson AM, Wadsworth J, Wellings K, Field J. Sexual attitudes and lifestyles. London: Blackwell Scientific Publications. 1994; 499p.
7. Committee on Practice Bulletins—Gynecology. ACOG Practice Bulletin Number 131: Screening for cervical cancer. Obstet Gynecol. 2012 Nov;120(5):1222-38.
8. MacDonald N, Stanbrook MB, Hébert PC. Human papillomavirus vaccine risk and reality. CMAJ (in French). 2008; 179 (6): 503, 505.
9. DeMay M. Practical principles of cytopathology. Revised edition. Chicago, IL: American Society for Clinical Pathology Press. 2007.
10. Cronjé, H.S.Screening for cervical cancer in developing countries. International Journal of Gynecology & Obstetrics. 2004; 84 (2): 101–08.
11. Roy M, Plante M, Renaud MC, Têtu B. Vaginal radical hysterectomy versus abdominal radical hysterectomy in the treatment of early-stage cervical cancer. Gynecol. Oncol. 2012; 62 (3): 336–9.
12. Moyer VA. Screening for cervical cancer: U.S. Preventive services task force recommendation statement. Annals of Internal Medicine. 2012; 156 (12): 880–91.
13. McGuire S. World Cancer Report 2014. Geneva, Switzerland: World Health Organization, International Agency for Research on Cancer, WHO Press, 2015. Adv Nutr. 2016 Mar 15;7(2):418-9
14. Kumar V, Abbas AK, Fausto N, Mitchell RN. Robbins Basic Pathology. 8th ed. Saunders Elsevier; 2007; 718–21.

15. Oldham RK, Robert O. Principles of cancer biotherapy. 5th ed. Dordrecht: Springer; 2009. 149p.

16. Hausen Z, Harald. Papillomaviruses and cancer: from basic studies to clinical application. Nature Reviews Cancer. 2002; 2(5): 342–50.

17. Singh GK, Miller BA, Hankey BF, Edwards BK. Persistent area socioeconomic disparities in U.S. incidence of cervical cancer, mortality, stage, and survival, 1975-2000. Cancer. 2004 Sep 1;101(5):1051-7

18. Harper D, Gall S, Naud P, Quint W, Dubin G, Jenkins D, et al. Sustained immunogenicity and high efficacy against HPV 16/18 related cervical neoplasia: Long-term follow up through 6.4 years in women vaccinated with Cervarix (GSK's HPV-16/18 AS04 candidate vaccine). Gynecol Oncol. 2008; 109: 158–59.

19. Tran NP, Hung CF, Roden R, Wu TC. Control of HPV infection and related cancer through vaccination. Recent Results in Cancer Research. 2014;193.149–71.

20. Luhn P, Walker J, Schiffman M, Zuna RE, Dunn ST, Gold MA, Smith K, Mathews C, Allen RA, Zhang R, Wang S, Wentzensen N. The role of co-factors in the progression from human papillomavirus infection to cervical cancer. Gynecol Oncol. 2013 Feb;128(2):265-70.