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ASSESSMENT OF AWARENESS OF CERVICAL CANCER AND PAP SMEAR TESTING IN FEMALES UP TO 40 YEARS AGE FROM BIHAR REGION

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Abstract

Cervical cancer remain leading cause of cancer in women in India, accounting for nearly 25.9 % of new cancer cases and 23.3% of all cancer-related deaths in the country. [11] In 2008 in India, the annual incidence and mortality from cervical cancer was 134,420 cases and 72,825 deaths, respectively. In view of the huge population burden and limited healthcare resources, we have to look for the various ways of cost effective preventive and treatment modalities. Cervical cancer screening is an important tool in prevention and early treatment because of window of opportunity during the longstanding pathogenesis of the cervical cancer. [12] Cervical cancer results from a persistent infection by a high-risk subset of human papillomavirus (HPV). [13] Most women's immune systems will eliminate HPV infection spontaneously, however, for a very small proportion of women, the infection will persist and can cause pre-cancerous changes in cells. Hence based on above findings the present study was planned for Assessment of Awareness of Cervical Cancer and PAP Smear Testing in Females up to 40 years age from Bihar Region.

The present study was planned in Department of Obstetrics and Gynaecology, Madhubani Medical College and Hospital, Madhubani, Bihar. In the present study 50 females of age up to 40 years admitted to Obstetrics and Gynaecology Department were enrolled and evaluated. After completion of the interview, the study participants were given health education regarding cervical cancer using pictorial diagrams by the researchers. At the end of the study, all the completed questionnaires were assessed and the responses of the participants were scored.

The data generated from the present study concludes that here is a need of the hour to formulate extensive awareness programmes, to educate our women regarding the early signs of the disease and promote Pap smear screening which can detect precancerous cervical lesions and also introduce HPV vaccination to prevent cervical cancer.

Keywords: Cervical cancer, Pap smear, HPV Vaccination, Awareness, etc.

Introduction

Cervical cancer is the third most common malignancy in women worldwide, and it remains a leading cause of cancer-related death for women in developing countries. In the United States, cervical cancer is relatively uncommon.

The incidence of invasive cervical cancer has declined steadily in the United States over the past few decades; however, it remains at high levels in many developing countries. The change in the epidemiologic trend in the United States has been attributed to mass screening with Papanicolaou (Pap) tests, which permits detection and treatment of preinvasive disease.

Recognition of the etiologic role of human papillomavirus (HPV) infection in cervical cancer has led to the recommendation of adding HPV testing to the screening regimen in women 30-65 years of age (see Workup). However, women who have symptoms, abnormal screening test results, or a gross lesion of the cervix are best evaluated with colposcopy and biopsy.

Worldwide, approximately 500,000 new cases of cervical cancer and 274,000 deaths are attributable to cervical cancer yearly, making cervical cancer the second most common cause of death from cancer in women. [1] Fortunately, the incidence of cervical cancer has decreased by more than 50% in the past 30+ years, largely due to the increasing use of cervical cancer screening with cervical cytology. [2]

The American Cancer Society estimates about 13,240 new cases of invasive cervical cancer will be diagnosed and about 4170 women will die from cervical cancer in 2018. [3] Although worldwide cervical cancer rates have decreased dramatically with the increase in screening efforts, incidence and prevalence in developing countries remains high due to lack of screening programs, with

approximately 80% of all cervical cancer deaths occurring in the developing world. [1]

The mainstay of cervical cancer screening for the last 60+ years has been the Papanicolaou test. The Papanicolaou test, also known as the Pap test or the Pap smear, was developed in the 1940s by Georgios Papanikolaou. It involves exfoliating cells from the transformation zone of the cervix to enable examination of these cells microscopically for detection of cancerous or precancerous lesions.

In the technique known as liquid-based cytology, these collected cells are released into a vial of liquid preservative that is then used in the cytology lab to produce a slide for microscopic evaluation of the cells. The older, traditional Pap technique involves direct transfer of the cervical cells to a microscope slide for evaluation. Although the traditional method may introduce confounders such as blood and other debris to the slide, which may make interpretation more difficult, both conventional cytology and liquid-based cytology have been shown to have similar sensitivity and specificity for moderate dysplasia or worse lesions when using a threshold of LSIL or higher. In addition, both types of cytological screening are considered acceptable by the American College of Obstetricians and Gynecologists. [2]

When abnormal cells are detected on the Pap Test, diagnostic testing in the form of colposcopy is often indicated. This testing may be followed by diagnosis of dysplasia via colposcopic biopsies. Subsequent cervical cancer may be prevented through the diagnosis and treatment of these cervical cancer precursors.

Evidence shows that approximately 99-100% of cervical cancers are attributable to infection by high-risk types of the human papillomavirus (HPV). HPV represents a family of double-stranded, circular DNA viruses that can infect skin or mucosal cells, including the anogenital region and the oral cavity, and may be transmitted easily via sexual intercourse or direct contact. [4, 5]

More than 100 types of HPV exist, 12 of which can involve the anogenital region and are considered "high risk" or oncogenic in nature. These include HPV types 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, and 59. Of these, HPV 16 is responsible for the largest number of CIN 3 and cervical cancer cases, and HPV 16 and 18 combined are thought to be responsible for nearly 70% of all cases of cervical cancer. [4] Although HPV is a necessary factor in the development of cervical dysplasia that can eventually lead to cervical cancer, most women infected with HPV will not develop cervical dysplasia. [6] The presence of high-risk HPV DNA is accompanied by cytologic abnormalities approximately one third of the time. Whether an HPV infection will progress relates to the persistence of the infection and also possibly to the immune response and smoking status of the woman. [7]

The female reproductive organs can be subdivided into the internal and external genitalia. The internal genitalia are those organs that are within the true pelvis. These include the vagina, uterus, cervix, uterine tubes (oviducts or fallopian tubes), and ovaries. The external genitalia lie outside the true pelvis. These include the perineum, mons pubis, clitoris, urethral (urinary) meatus, labia majora and minora, vestibule, greater vestibular (Bartholin) glands, Skene glands, and periurethral area.

The cervix is the inferior portion of the uterus, separating the body of the uterus from the vagina. The cervix is cylindrical in shape, with an endocervical canal located in the midline, allowing passage of semen into the uterus. The external opening into the vagina is termed the external os, and the internal opening into the endometrial cavity is termed the internal os. The internal os is the portion of a female cervix that dilates to allow delivery of the fetus during labor. The average length of the cervix is 3-5 cm.

The Pap test is indicated to screen for malignant and premalignant lesions of the cervix. The recommended age at initiation of cervical cancer screening has undergone significant revision over time as the natural history of HPV infection and subsequent cervical dysplasia has been elucidated. Although former guidelines recommended starting Pap smear screening at age 18 or the onset of sexual activity, these guidelines were revised in 2006 to recommend initiation 3 years after the onset of sexual activity or age 21, whichever comes first. In 2009, these were further revised to recommend that cervical cancer screening begin at age 21, regardless of sexual history. This recommendation was confirmed in 2012 and again in January 2016. [2]

Abnormal cervical cytology is very common in young women, and most abnormal cytology resolves without treatment in adolescents. In addition, women under the age of 21 account for only 0.1% of all cervical cancers, and no evidence exists that cervical cancer screening in this age group reduces cervical cancer incidence, morbidity, or mortality.

Recognizing these facts and the likelihood of cervical cancer screening leading to unnecessary and potentially harmful evaluation and treatment in women at very low risk for malignancy, the 2009 ACOG guideline revision recommended cervical cancer screening beginning at age 21 years of age, regardless of sexual history, and that recommendation remains unchanged. [2]

Both the U.S. Preventive Services Task Force (USPSTF) and the American Cancer Society (ACS) agreed with this recommendation and issued age-appropriate screening strategies for cytology (Pap tests) and HPV testing for cervical cancer screening in 2012. [8, 9]

In 2014, the FDA approved one of the HPV DNA tests (cobasHPV test) for primary screening for cervical cancer in women aged 25 years and older. Although not yet fully endorsed by major societies, a panel of experts co-sponsored by the ASCCP and the SGO published recommendations for using primary HPV testing for cervical cancer screening. [10] In the proposed algorithm, women aged 25 years and older would undergo cervical HPV testing for screening, as opposed to cytology. Women who test negative for high-risk HPV should be re-screened no sooner than every 3 years. For women who test positive for high-risk HPV, HPV genotyping is performed, and those who test positive for HPV 16/18 are referred for coloposcopy. Those who are high-risk HPV positive but 16/18 negative undergo cervical cytology. Those with negative cytology results are rescreened in 1 year, and those with ASC-US cytology or greater are referred for colposcopy.

Cervical cancer remain leading cause of cancer in women in India, accounting for nearly 25.9 % of new cancer cases and 23.3% of all cancer-related deaths in the country. [11] In 2008 in India, the annual incidence and mortality from cervical cancer was 134,420 cases and 72,825 deaths, respectively. In view of the huge population burden and limited healthcare resources, we have to look for the various ways of cost effective preventive and treatment modalities. Cervical cancer screening is an important tool in prevention and early treatment because of window of opportunity during the longstanding pathogenesis of the cervical cancer. [12] Cervical cancer results from a persistent infection by a high-risk subset of human papillomavirus (HPV). [13] Most women's immune systems will eliminate HPV infection spontaneously, however, for a very small proportion of women, the infection will persist and can cause pre-cancerous changes in cells. Hence based on above findings the present study was planned for Assessment of Awareness of Cervical Cancer and PAP Smear Testing in Females up to 40 years age from Bihar Region.

Methodology:

The present study was planned in Department of Obstetrics and Gynaecology, Madhubani Medical College and Hospital, Madhubani, Bihar. In the present study 50 females of age up to 40 years admitted to Obstetrics and Gynaecology Department were enrolled and evaluated. After completion of the interview, the study participants were given health education regarding cervical cancer using pictorial diagrams by the researchers. At the end of the study, all the completed questionnaires were assessed and the responses of the participants were scored.

All the patients were informed consents. The aim and the objective of the present study were conveyed to them. Approval of the institutional ethical committee was taken prior to conduct of this study.

Following was the inclusion and exclusion criteria for the present study.

Inclusion Criteria: Females admitted to Obstetrics and Gynaecology Department.

Exclusion Criteria: Females diagnosed with any malignancy or premalignant conditions and being treated for the same. Females admitted in labour rooms and eclampsia rooms. Females admitted with serious illness requiring intensive care. Females with psychiatric illness.

Results & Discussion:

Carcinoma of the uterine cervix is a major health problem faced by the Indian women, and every year, approximately 120,000 women develop this disease. [14] India accounts for 15.2 per cent of the total cervical cancer deaths in the world. [15] Although the incidence of carcinoma cervix has declined in the urban population, in the rural areas it continues to be highly prevalent. [16] The usual 10-20 years of natural history of progression from mild dysplasia to carcinoma cervix makes this cancer as relatively early preventable disease and provides the rationale for screening. [17] Despite existence of national guidelines, the screening coverage in India is appalling low. As a result, the diagnosis of carcinoma cervix is based on opportunistic screening or after the onset of the symptoms. Although the data from the 20 population-based cancer registries in India indicate a steady decline in the carcinoma cervix incidence over the last two decades, the disease still occupies number two position with a high risk of the disease. [18-19].

Traditionally pap smear has remained the corner stone of cervical cancer screening programs globally and in India up till now. The evidence of pap smear's efficacy and utility is largely based on the results from the developed countries where this screening tool has resulted in definitive decrease in overall incidence and disease burden. But when it comes to the countries from developing world especially Indian contest, the overall efficacy becomes questionable because of variety of technical and social factors responsible for the same.

Hence forth we need to judge the efficacy and practical utility of various alternative screening methods available to us and review our health policies targeted to screen and prevent the leading cancer cause in Indian woman.

Pap smear is a cytology based screening tool in which we need to have a dedicated staff which at least include a nurse or doctor to collect the sample, a cytotechnician to process and analyze the smear and a pathologist to confirm a positive finding on biopsy. If a smear turn out to be positive then the female is required to be traced, notified and then referred to further investigation and treatment. This whole process requires long time involving smear collection, processing and positive reporting, subsequent investigation and treatment. This requires multiple visits and complex process to follow for the successful outcome of the overall preventive program. These act as major hurdle in the whole program in developing country such as India. Moreover the cytology based screening program has got poor sensitivity in developing countries as compared to developed countries ie 26-65% and 53% respectively in CIN and CIN [20-21] This poor sensitivity has been improved by organized repeated testing in developed countries and this is the reason for success of the program.

The carcinoma cervix is predicted to decrease by 2020, and there are many factors contributing to its decline. The improvement in the living standard and awareness among women through print and audio-visual media has resulted in a decline in the incidence of cervical cancer. Regular cervical cytological examination by all sexually active women can prevent the occurrence of carcinoma cervix. [22] In addition, awareness for genital hygiene and visiting hospital at pre-clinical stage are the contributory factors for the control of carcinoma cervix in urban settings. The situation of cancer prevalence is alarming in rural population where the majorities of women are illiterate and are ignorant about the factors that contribute to the development of cervical cancer. They are socio-economically weak and have poor hygienic conditions and many other risk factors such as early age marriage and multiple pregnancy. In addition, medical facilities, advice and awareness programmes are almost non-existent. [23]

Table 1: Awareness Status of Cervical Cancer

Level of Awareness	No. of Cases
Good	5
Fair	8
Poor	37
Total	50

Table 1: Socio-Demographic Characters & Awareness

Parameters	Level of Awareness		
	Good	Fair	Poor
No. of Cases	5	8	37
Age:			
Less than 25	3	3	25
years	2	3	9
25 – 35 years	1	2	3
36 – 40 years			
Marital			
Status:	4	5	29
Married	0	1	2
Single	1	2	6
Widow			
Education			
Level:	0	0	0
Illiterate	0	0	12
Primary	1	2	16
Secondary	4	6	9
Tertiary			
Occupation:			
Unskilled	0	3	23
Semi Skilled	0	3	10
Skilled	5	2	4
Locality:			
Urban	5	6	4
Rural	0	2	33

Table 3: Symptoms of cervical cancer

Symptoms	Observed in No. of Cases
Abnormal vaginal bleeding	32
Back pain	19
Vaginal discharge	25
Heavy menstrual flow	30
Postmenopausal bleeding	31
Post-coital bleeding	16
Pelvic pain	24
Blood in stools	12
Weight loss	27

Table 4: Risk factors of cervical cancer

Risk factors	Observed in No. of Cases
Infection with a virus (HPV)	7
Smoking	22
Having a weakened immune system (eg.HIV)	32
Long term use of oral contraceptive pills (OCPs)	14
Star ting to have sexual intercourse early (before 17 years of age)	21
Having many sexual partners	2
Having many children	18
Having a sexual partner with many previous partners	2

Table 5: Modes of prevention of cervical cancer

Risk factors	Observed in No. of Cases
Screening with PAP Smear	16
HPV Vaccines	7
Delaying first sexual intercourse & child bearing	12
Using Condoms	19
Limited the number of sexual partners	24
Total	50

Creating awareness about the hazards of cervical cancer among rural women and apprising them about the utility of early detection tests and their availability have been the main focus for any rural screening programme. Dhamija et al [24] surveyed to assess the knowledge, attitude and practice among rural women and found that younger women had better awareness and knowledge about cervical cancer and various risk factors, signs and symptoms associated with the disease. Literacy drive for education and exposure to family planning devices are found to be important in creating awareness about this disease. Early episodes of gynaecological problems and treatment lead to higher awareness, and it was felt that efforts should be made to innovate ways to reach older and illiterate women for better awareness in the community. [24]

Pre-camp educational drive to motivate the women is mandatory. Another study has reported usefulness of camp organized in Delhi in finding abnormal cytology in women suspected of carcinoma on clinical examination and emphasized the need for cervical cancer screening of women at regular intervals through camp approach in the country. [25]

Karunakaran et al [26] undertook a camp based cross-sectional study in Karindalam village in Kerala to assess the Pap smear test, knowledge, attitude and practice regarding carcinoma cervix and its screening methods. Community-level women volunteers were used to mobilize women for the camp, and a face-to-face interview was held using a pre-tested questionnaire and Pap test done. The Pap smear identified 0.6 per cent of women with high intraepithelial lesions and adequate follow up was offered.

During ongoing rural cervical cancer screening programme carried out at Kakori and Malihabad blocks of Lucknow, Uttar Pradesh, Misra et al [27] found that the overall acceptance rate of Pap smear screening was approximately 32 per cent of motivated women who attended the camp. This could be made possible by counselling and distribution of pamphlets.

The American Cancer Society released new screening recommendations for the prevention and early detection of cervical cancer. Ideally, these new tests will increase the early detection of meaningful Pap smear abnormalities, reduce the number of unsatisfactory smears and provide fewer ambiguous results. It is also hoped that these new screening methods will not increase the number of false-positive results, but will improve the productivity of cytology laboratories without substantially increasing costs. The new tests include liquid-based/thin-layer preparations to improve the quality and adequacy of the Pap smear; computer-assisted screening methods to improve Pap smear interpretation; and newgeneration human papillomavirus testing methods that may be useful in triaging patients with atypical squamous cells of undetermined significance or low-grade squamous intraepithelial lesions. [28-30] Ideally, an improved, more readable Pap smear or a technique that ensures that cytotechnologists do not miss important findings will improve patient outcomes and reduce morbidity and mortality from cervical cancer.

This study has some limitations which may influenced the result of the study. The method of interviewing may have influenced the results. That is, women may have responded in a positive manner to the questions to present themselves in a socially desirable way. Similarly, responses are all self-reported and may not reflect true events

Conclusion:

The data generated from the present study concludes that here is a need of the hour to formulate extensive awareness programmes, to educate our women regarding the early signs of the disease and promote Pap smear screening which can detect precancerous cervical lesions and also introduce HPV vaccination to prevent cervical cancer.

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