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Screening for Cancer Cervix in the 30-60 year age group population attending Gandhi Hospital

[*]Madhulatha Alexander, D. Kavitha Naik[1], Mannapuram Padma[2]
**Associate Professor, Department of Obstetrics & Gynaecology, Government Medical College, Mahabubnagar, Telangana*
1. Assistant Professor, Department of Pathology, Gandhi Medical College, Secunderabad, Telangana
2. Assistant Professor, Department of Obstetrics & Gynaecology, Government Medical College, Mahabubnagar, Telangana
Corresponding Author:- Dr Madhulatha Alexander, Associate Professor, Department of Obstetrics & Gynaecology, Government Medical College, Mahabubnagar, Telangana

Abstract
Background:
Cancer cervix is a common disease in India with a high mortality rate caused by certain strains of the HPV virus. It has a long history before it becomes malignant, and there are screening tests to identify this disease in its early stage. Initiation of treatment in stage can be curative. This study was undertaken to screen women who were in this early precancerous stage.
Objectives:
1. To estimate the prevalence of abnormal PAP smears among study population
2. To find correlation between abnormal PAP smears and Human Papilloma Virus
Methodology:
A hospital based cross sectional study was carried out among 100 subjects attending Gynecology OPD from September 2019 to December 2019. All the subjects who met inclusion criteria were screened for Papanicolaou (Pap) smear and Human Papilloma Virus (HPV) testing.
Results:
Majority of the study subjects were in the age group of 30 – 34 years. Only 7% of cases had Pap smear abnormalities and 4% were positive for HPV. Identification of the cases in the precancerous stage, will help in reducing morbidity and mortality.
Keywords: *Cervical cancer, Human Papilloma Virus, Cervical screening*

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I. Introduction:

In India, cervical cancer is the second commonest cancer in women, with a woman dying of cervical cancer every 8 minutes. Cervical cancer is a major public health challenge and every effort must be made toward its reduction. The etiology of cervical cancer is linked to Human Papilloma Virus (HPV) infection (100%).[1]

HPV infection is sexually transmitted and is the most common viral infection of the female reproductive tract.[2] There are more than hundred varieties of human papillomavirus (HPV), of which only two HPV types (16 and 18) cause 70% of cervical cancers and pre-cancerous cervical lesions. Infections with other HPV types cause warts. A majority of HPV infections resolve spontaneously and do not cause symptoms or disease.[2] The main risk factors for genital HPV infection in females include acquisition of new male partners, an increasing number of lifetime sexual partners both in females and their male partners and having non-monogamous male partners.[3]

Persistent infections with specific types of HPV (especially 16 and 18) may lead to precancerous lesions. It takes about fifteen to twenty years for cervical cancer to develop in immune-competent women, who are infected with HPV 16 or 18. In immunosuppressed women, infection with HPV can progress to cervical cancer in five to ten years. Coinfection with other sexually transmitted agents, like herpes simplex, chlamydia and gonorrhoea can contribute to this progression. Progression is also seen faster in women of greater parity, and in those who smoke.

Cervical cancer has a precancerous stage and early initiation of treatment can be curative. Hence screening is imperative, especially in the reproductive age group.

Pap smear is the time tested cytological screening test which detects precancerous lesions and has a sensitivity of 93% and a specificity of 73%.[4] Smears are taken from the cervix smeared onto slides and are dipped into fixative and transported to the laboratory. The smears were then read by an expert Pathologist experienced in cytology. Liquid based cytology (LBQ) has emerged superior to the Pap smear, with a sensitivity of 81% and specificity of 95. 4%. In Liquid based cytology, there is lesser opportunity for cellular debris to obscure the field as the cells are more evenly spread through the slide. The high cost limits its use, and hence the conventional PAP is still used in India (and in our study).[5]

In recent years, the role of HPV testing in this disease has been established. The HPV test looks for DNA or RNA from certain high-risk types of HPV in samples of cells taken from the cervix. Women who were negative for the virus are at a very low risk of developing the cancer- even lower than women who have had a negative cytology. Human papillomavirus (HPV) DNA testing has also been proposed as an alternative to primary cervical cancer screening using cytological testing. Didem Egemen et al in their study concluded that HPV-negative test results indicate a reduced risk and HPV-positive test results indicate that the individual is at an increased risk of cervical cancer.[6]

Between 21-29 years there is no need to do the HPV test, as the HPV infection is very common in this age group and the body naturally clears it (ACOG guidelines 2012). When the HPV test and a Pap test are done at the same time it is called a Co-Test. The same cell sample may be used for both the HPV test and the Pap test. Co-testing is more likely to find abnormal cells or cervical cancer than a Pap test alone is.

In developing countries, ignorance and illiteracy play an important role in the development and progression of this preventable cancer. Hence, diagnosis is delayed, and access to treatment is poor, resulting in a higher rate of death from cervical cancer.

Objectives of the study:

1. To estimate the prevalence of abnormal PAP smears among study population
2. To find correlation between abnormal PAP smears and Human Papilloma Virus

II. Material and methods:

I. Study design: Hospital based Cross sectional study
II. Study area: Gandhi Medical College, Tertiary care Institute, Hyderabad, Telangana
III. Study duration: 4 months (Sept 2019 – Dec 2019)
IV. Study Subjects: All patients attending Gynaecology Out – Patient Department during study period
V. Sample size: 100 subjects
VI. Sampling technique: Simple Random sampling
VII. Inclusion Criteria: a. Women in the Age group of 30-60 years
b. Married women
c. Those who are willing to take part in study
VIII. Exclusion Criteria: a. Pregnant married women
b. Those who failed to consent for the study
IX. Study tools: A pre tested, semi structured questionnaire was used which included questions on clinical and socio demographic profile. After a thorough history and preliminary general examination, samples were obtained by trained personnel, and the smears were read by an expert in cytology. HPV DNA detection was done by Polymerase Chain Reaction (PCR) method. Results were followed up and correlated clinically. Appropriate follow up was initiated.
X. Data analysis: Epi info and Spss
XI. Ethical considerations: Ethical Committee Clearance was obtained before the start of the study. Informed consent was taken from all the study participants.

III. Results:

A total of 100 married women in the age group of 30 – 60 years were enrolled and following results were obtained.

Table 1 - Age distribution

Age in years	Number (%)
30 - 34	35 (35)
35 - 39	22 (22)
40 - 44	23 (23)
45 - 49	13 (13)
50 - 54	4 (4)

55 - 60	3 (3)
TOTAL	100 (100)

Majority (35%) of study population was in the age group of 30 – 34 years. Around 23% of study population was in the age group of 40 – 44 years and 22% were in the age group of 35 – 39 years.

Table 2 – Socioeconomic distribution

Socioeconomic class	Number (%)
Upper Middle Class (Class III)	15 (15)
Upper Lower class (Class IV)	30 (30)
Lower class (Class V)	55 (55)
TOTAL	100 (100)

In this study, majority of study subjects (55%) were from lower socio economic status i.e. class V and 30% were from Upper lower class (class IV) as per modified Kuppuswamy's classification which is used as a scale for socioeconomic classification in urban areas.

Figure 1 – Complaints of the subjects

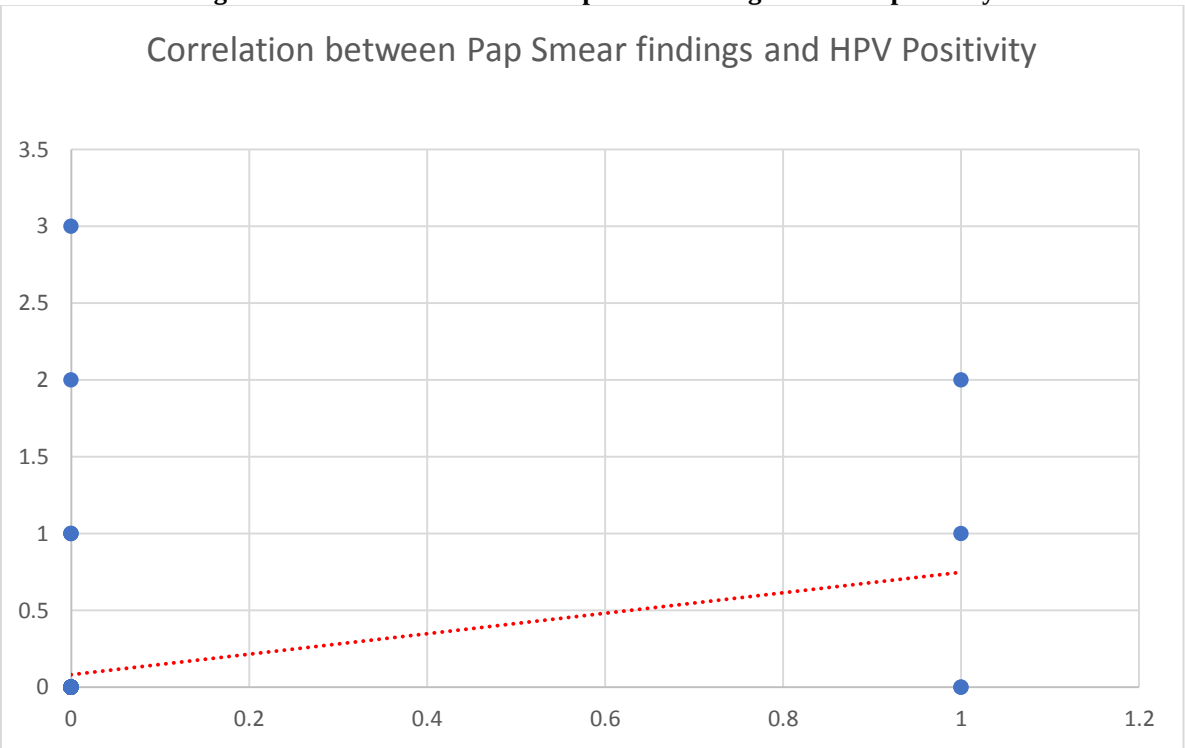
The most common presenting symptom was abnormal uterine bleeding (AUB) 41%. Other symptoms included abdominal pain, referrals from other departments with incidental gynaecological symptoms (non-specific- 29%), White discharge per vagina (WDPV) comprised only 15 % of the cases. Four percent of the cases were post-menopausal.

Table 3 – HPV positivity and Pap smear results

PAP SMEAR	NILM	ASCUS	LSIL	HSIL	UNSATISFACTORY
Positive		4	2	1	
Negative	93				
HPV Positive	2		1		1`

This above table reporting of PAP smear is according to the Bethesda Classification .
NILM- Negative for Intraepithelial Lesion /Malignancy
ASCUS- Atypical Squamous Cells of Undetermined Significance
LSIL-Low grade Squamous Intraepithelial Lesion
HSIL- High Grade Squamous Intraepithelial Lesion
In this study majority (93%) showed negative for intraepithelial lesion/malignancy. Around 4% had atypical squamous cells of undetermined significance and 2% had low grade squamous intraepithelial lesion. One percent of study subjects showed High grade squamous intraepithelial lesion. In this study, only 4% tested positive for Human Papilloma Virus (HPV) and of those who tested positive, 50% of the cases had normal Pap smear - Negative for Intraepithelial Lesion /Malignancy (NILM).

Figure 2 – Correlation between Pap smear findings and HPV positivity



In our study, weak correlation was observed between Pap smear findings and HPV positivity. The correlation (r) value was found to be 0.2.

IV. Discussion:

This is a hospital based cross sectional study. In this study, there were only 4 % of patients who were positive for HPV. Half of the patients who tested positive for HPV, showed abnormality on the PAP smear. 5% of cases in ASCUS group (usually caused by benign infections) can lead to pre- cancer/ Cervical Cancer Abnormality in Pap smear warrants further testing and follow-up. The overall prevalence of cervical abnormalities in this study, as detected by the PAP smear, was very low. The low number of abnormal cytology and HPV positivity limits our ability draw suitable conclusions.

Studies on the natural history of HPV infections in young women have shown that the vast majority of HPV infections are transient. Approximately 70% of women with HPV infections became HPV negative within one year and as many as 91% of them became HPV negative within two years, with a median duration of infection of eight month.[7]

The updated guideline, recently published, recommended that cervical cancer screening should be initiated at the age of twenty five, and it should be done regularly till the age of sixty five. Using the HPV testing in combination with a Pap test every five years (Co - Test), or performing a Pap test alone every three years are acceptable options, as not all laboratories have transitioned to primary HPV testing.[8]

The present study findings were different with a study by Rositch et al in which maximum study participants were in the age group of 45 – 49 years. [9]

The present study findings were consistent with a study by Rositch et al in which maximum study participants were from lower socio economic status. [9]

The present study findings were almost similar to a study Peto J et al in which prevalence of abnormality of any grade was 7% for below age 35, 5% at age 35–44 and 2% at age 45 or over.[10]

The present study findings were consistent with a study by Rositch et al in which the prevalence of HPV positivity and abnormal pap smears concordance decreased with age.[9]

Similar findings were also noted in a study by Rodriguez AC et al in which regardless of the woman's age, newly detected infections were associated with very low risk of HPV infection.[11]

V. Conclusions & Recommendations:

In India, there is a need to educate women and insist on regular pap smears, and look for cheaper modalities of screening for cancer cervix.

Following screening, the subjects who are found positive should undergo further testing which requires biopsy for confirmation, and further expert management. Proper follow up and patient education can go a long way in decreasing this potentially curable disease. With the vaccine being available for the common high risk genotypes of HPV, there will be time where cervical cancer will be eradicated.

If 90% of girls less than fifteen years are vaccinated, and screening of cervical cancer covers 70% of the women between ages 35 and 45 years, mortality due to cervical cancer would decrease by 70%.

Limitations of the study:

1. Since it's a hospital based study not all findings can be generalised to community.
2. The test for screening is expensive, and hence could not be applied to a wider population.
3. Due to the COVID – 19 pandemic, follow up at regular intervals could not be initiated.

Conflict of interest - none

References:

[1]. Menezes LJ, Jang SE, Ross DJ, Glaser AD, Varghese R. Cervical HPV Infection in Indian Women: Screening and Immunization as Preventive Strategies. MGM J Med Sci. 2014; 1(2):65-75.

[2]. World Health Organization (WHO). Comprehensive cervical cancer prevention and control: a healthier future for girls and women. WHO Guidance Note 2013.

[3]. Carol Chelimo, Trecia A.Wouldes, Linda D. Cameron J, Mark Elwood. Risk factors for and prevention of human papillomaviruses (HPV), genital warts and cervical cancer. Journal of Infection. March 2013. 66 (3). Pages 207-21.

[4]. Cobucci R, Maisonnette M, Macedo E, Santos Filho F C, Rodovalho P, Nobrega M M, Goncalves A. Pap test accuracy and severity of squamous intraepithelial lesion. Indian J Cancer. 2016; 53:74-6.

[5]. Zhu J,Norman I, Elfgren K et al. A comparison of liquid based cytology and Pap smear as a screening method for cervical cancer. Oncol Rep. July 2007. Volume 18. Issue 1. Pp: 157-60.

[6]. Egemen D, Cheung LC, Chen X, Demarco M, Perkins RB, Kinney W, Poitras N, Befano B, Locke A, Guido RS, Wiser AL, Gage JC, Katki HA, Wentzensen N, Castle PE, Schiffman M, Lorey TS. Risk Estimates Supporting the 2019 ASCCP Risk-Based Management Consensus Guidelines. J Low Genit Tract Dis. 2020 Apr; 24(2):132-143. PMID: 32243308; PMCID: PMC7147417.

[7]. Ho GY, Bierman R, Beardsley L, Chang CJ, Burk RD Natural history of cervicovaginal papillomavirus infection in young women. N Engl J Med. 1998 Feb 12; 338(7):423-8

[8]. Elizabeth T. H. Fontham, Dr PH Andrew, Wolf, Timothy R. Church, Ruth Etzioni et al. Cervical cancer screening for individuals at average risk: 2020 guideline update from the American Cancer Society. CA: A Cancer Journal for Clinicians. July 2020. 70 (5).

[9]. Rositch AF, Silver MI, Burke A, Viscidi R, Chang K, Duke CM, Shen W, Gravitt PE. The correlation between human papillomavirus positivity and abnormal cervical cytology result differs by age among perimenopausal women. J Low Genit Tract Dis. 2013 Jan;17(1):38-47. doi: 10.1097/LGT.0b013e3182503402. PMID: 22885643; PMCID: PMC3499667.

[10]. Peto J, Gilham C, Deacon J, Taylor C, Evans C, Binns W, Haywood M, Elanko N, Coleman D, Yule R, Desai M. Cervical HPV infection and neoplasia in a large population-based prospective study: the Manchester cohort. Br J Cancer. 2004 Aug 31; 91(5):942-53. doi: 10.1038/sj.bjc.6602049. PMID: 15292939; PMCID: PMC2409880.

[11]. Rodríguez AC, Schiffman M, Herrero R, Hildesheim A, Bratti C, Sherman ME, Solomon D, Guillén D, Alfaro M, Morales J, Hutchinson M, Katki H, Cheung L, Wacholder S, Burk RD. Longitudinal study of human papillomavirus persistence and cervical intraepithelial neoplasia grade 2/3: critical role of duration of infection. J Natl Cancer Inst. 2010 Mar 3;102(5):315-24

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