

To study the role of conventional pap smear in post- menopausal women

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Abstract

Cervical cancer is one of the world's deadliest but most easily preventable forms of cancer for women. According to Globocan data, cervical cancer is the fourth most common cancer in women, and the seventh overall, with an estimated 528,000 new cases in 2012. There were an estimated 266,000 deaths from cervical cancer worldwide in 2012, accounting for 7.5% of all female cancer deaths. Elderly women are more likely to be diagnosed at a late stage due to lack of a regular access to gynaecological care or cancer screening. Pap smear is one of the best screening tools available for preventing cervical cancer with a sensitivity of 72% and specificity of 94%. The present case study is a one year retrospective analysis carried out in SGRDIMSAR which included all the post-menopausal Pap smear cases taken at the department of obstetrics and gynaecology during this period.

Each case was analysed in detail with special emphasis on the age of menopause, duration of menopause, presenting complains, indication for Pap smear, abnormal findings of Pap smear and premalignant changes in Pap smear. Data was compiled and statistically analysed.

Total number of patients reporting negative for intra epithelial cells were 47(41.6%), inflammatory smears with atypia were reported in 35(31%) patients, moniliasis was diagnosed in 6(5.3%), bacterial vaginosis in 5(4.4%). Epithelial cell abnormalities were noted in 4% cases. ASCUS was diagnosed in 1(0.8%) patient; HSIL in 1(0.8%) patient and LSIL in 2(1.7%) patients. Atrophic smear was found in 16(14.2%) cases. No correlation was found between the presence of atrophic smears on Pap smear and advancing age of the women by Chi square test.

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Introduction

Cervical cancer is one of the world's deadliest but most easily preventable forms of cancer for women. According to Globocan data, cervical cancer is the fourth most common cancer in women, and the seventh overall, with an estimated 528,000 new cases in 2012. There were an estimated 266,000 deaths from cervical cancer worldwide in 2012, accounting for 7.5% of all female cancer deaths. Almost nine out of ten (87%) cervical cancer deaths occur in the less developed regions. Mortality varies 18-fold between the different regions of the world, with rates ranging from less than 2 per 100,000 in Western Asia, Western Europe and Australia/New Zealand to more than 20 per 100,000 in Melanesia (20.6), Middle (22.2) and Eastern (27.6) Africa.⁽¹⁾ Every year in India, 122,844 women are diagnosed with cervical cancer and 67,477 die from the disease. Fortunately, the natural history of cervical cancer is such that it is possible to detect it early during a pre invasive curable stage by screening and early intervention thereby preventing its progression into life threatening illness.⁽²⁾ This high statistics on mortality themselves speak that enough is not being done to prevent this preventable cancer.

In India, the peak age for cervical cancer incidence is 55–59 years.⁽³⁾ Elderly women are more likely to be diagnosed at a late stage due to lack of a regular access to gynaecological care or cancer screening.⁽⁴⁾ Postmenopausal women are infected with persisting

oncogenic HPV at a substantial rate, supporting the need for continued screening in them to detect pre neoplastic lesions.⁽⁵⁾ Pap smear is one of the best screening tools available for preventing cervical cancer. The most widely used system for describing Pap smear is The Bethesda System, 2001.⁽⁶⁾ Pap smear cervical cytology with a sensitivity of 72% and specificity of 94% is suitable for population based screening programme.⁽⁷⁾

The mortality rate of cervical cancer can be significantly reduced if a woman is screened once when she is between the ages of 40-45 years.⁽⁸⁾ The present study is to evaluate the findings of Pap smear in post-menopausal women.

Aims and Objectives

1. To study the different indications of Pap smear in post-menopausal women
2. To evaluate different pap smear findings in post-menopausal women
3. To find the correlation between age of the patient and post – menopausal atrophic smears

Materials and Method

The present study is a retrospective analysis carried out in SGRDIMSAR from 1st Jan 2016 to 1st Jan 2017. Our Institution is a tertiary care centre situated in rural area in the periphery of Amritsar. Pap smear is being done by conventional method using Ayer's

spatula and endocervical brush. The reporting is according to Bethesda classification 2001. This study included all the post-menopausal Pap smear cases taken at the department of obstetrics and gynaecology. After taking approval from institutional ethics committee, data was retrieved by reviewing Pap smear register, menopause clinic register and gynaecology OPD case records. Each case was analysed in detail with special emphasis on the age of menopause, duration of menopause, presenting complaints and indication for Pap smear, findings of Pap smear and premalignant changes if any. Data was compiled and statistically analysed. Data analysis was done using SPSS version 20.0.

Exclusion Criteria

1. Women having surgical menopause
2. Women on HRT
3. Unsatisfactory smears

Results

The total numbers of PAP smears taken in our institute from 1st Jan 2016 to 1st Jan 2017 were 3950. The total numbers of PAP smears taken in post-menopausal women during this period were 187. Satisfactory cervical smears for evaluation were obtained in 113 cases (60.4%). The remaining 74 cases (39.5%) were unsatisfactory for evaluation due to low squamous cellularity and presence of obscuring blood, mucinous material or inflammation. The unsatisfactory smears were excluded from the study.

In 20 cases (17.6%), smears were satisfactory for evaluation but lacked the endocervical cells.

The mean age in the study group was 50.6 +/- 4.32 yrs. 45 – 50 yr age group included maximum number of patients in this study 72 (63.7%). 51 – 55 yr age group included 32(28.3%) patients. 56-60 yr age group included 4(3.5%) patients. 61- 65 yr age group included 5(4.4%) patients.

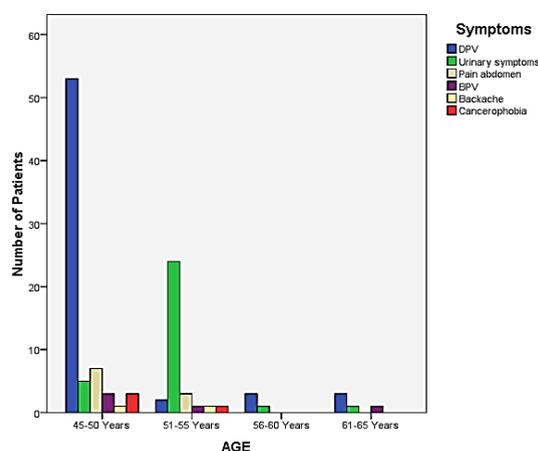
| Age Group (Yrs) | No. of Patients | % Age |
|-----------------|-----------------|-------|
| 45-50 | 72 | 63.7 |
| 51-55 | 32 | 28.3 |
| 56-60 | 04 | 3.5 |
| 61-65 | 05 | 4.4 |

The average duration of menopause in the study group was 3.96+/-4yrs.

Amongst all the patients, 109 (96.4%) cases were symptomatic. The most common symptom was discharge per vaginam in 61 (54%) cases followed by burning micturition in 31(27.4%) cases. Abdominal pain was present in 10(8.8%) cases. Only 5(4.4%) patients presented with a complaint of spotting per vaginam and backache was reported in 2(1.8%) patients. Cancerophobia in 4(3.5%) of the patients.

| Presenting Complaints | No of Patients having Symptoms | % Age |
|-----------------------|--------------------------------|-------|
| Discharge per vaginam | 61 | 54 |
| Urinary symptoms | 31 | 27.4 |
| Pain abdomen | 10 | 8.8 |
| Bleeding per vaginam | 5 | 4.4 |
| Backache | 2 | 1.8 |
| Cancerophobia | 4 | 3.5 |

The most common symptom in the age group of 45-50 years was discharge per vaginam which was present in 52(73.6%) of this group. In 51- 55yrs age group, burning micturition was the most common chief complaint present in 24(75%) patients of this age group. In 56- 60 yrs age group, the maximum number of patients 3(75%) presented with abdominal pain. 3(75%) patients of 61 – 65 years presented with abdominal pain.

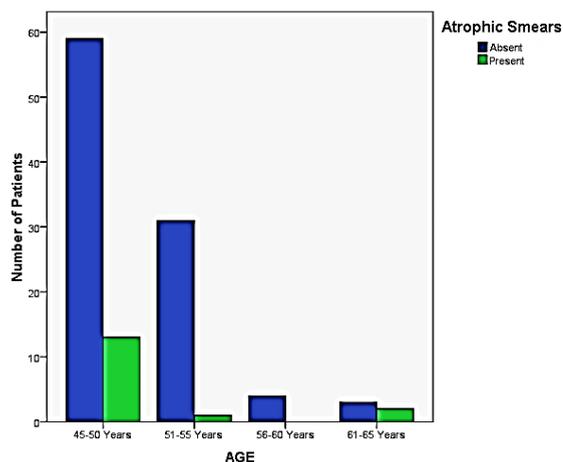


On per speculum examination, normal looking cervixes were seen in 83(73.5%) cases and unhealthy cervixes were reported in 30(26.5%) patients in our study group.

The smears were reported as per the guidelines specified in The Bethesda System (2001). The total number of patients which reported negative for intra epithelial lesions were 47(41.6%). Inflammatory smears with reactive atypia were reported in 35(31%) patients. Inflammatory smears with infections including moniliasis were seen in 6(5.3%) patients. Bacterial vaginosis was reported in 5(4.4%) cases in our study group. Epithelial cell abnormalities were seen in 4(3.53%) cases. ASCUS was diagnosed in 1(0.8%) patient. HSIL was reported in 1(0.8%) patient. LSIL was seen in 2(1.7%) patients.

| Pap Smear Results | | No of Patients | % Age |
|--|------------------------|----------------|-------|
| Negative for Intra – Epithelial Lesions | | 47 | 41.6% |
| Inflammato ry with Infections | Moniliasis | 6 | 5.3% |
| | Bacterial Vaginosis | 5 | 4.4% |
| | Trichomoniasis | 0 | 0 |
| Inflammation / Reactive Cellular Atypia | | 35 | 31% |
| Atrophic | | 16 | 14.2% |
| Epithelial Cell Abnormalities | | | |
| ASCUS | | 1 | 0.8% |
| LSIL | | 2 | 1.7% |
| HSIL | | 1 | 0.8% |
| AGC | | 0 | 0 |

Atrophic smears were reported in 16(14.2%) patients in our study group. Chi square analysis test was applied to find the correlation of the presence of atrophic smears in the women with advancing age. No significant results could be obtained. (p value= 7.5)



Discussion

Cervical cancer is the commonest cancer cause of death among women in developing countries.⁹ India alone accounts for one-fourth of the global cervical cancer burden. Despite the statistics, cervical cancer is a favourable site for an effective control programme. It is easily accessible and can be screened by the techniques like Pap smear, HPV DNA and colposcopy. The progression from high grade changes to cancer cervix takes an average of 10 years which enables it to be diagnosed at a very early stage.⁽⁵⁾ The Pap smear has been the method of choice for cervical cancer screening since the 1950s, proving valuable for mass screening and enabling detection of lesions early enough for effective treatment.⁽¹⁰⁾

The total numbers of PAP smears taken in our institute from 1st Jan 2016 to 1st Jan 2017 were 3950.

The total numbers of PAP smears taken in post-menopausal women during this period were 187.

Satisfactory cervical smears for evaluation were obtained in 113 cases (60.4%). The remaining 74 cases (39.5%) were unsatisfactory for evaluation due to low squamous cellularity and presence of obscuring blood, mucinous material or inflammation. The percentage of smears reported as unsatisfactory for evaluation in an earlier study is 18.94%.⁽¹¹⁾ The 2001 Bethesda system criteria for Pap test reporting included semi – quantitative criteria, which arbitrarily defined an estimated minimum of approximately 8000 - 12000 or 5000 well preserved and well – visualized squamous cells as adequate for evaluation with conventional smears and liquid based preparations, respectively. The unsatisfactory smears were excluded from the study.

In 20 cases (17.6%), smears were satisfactory for evaluation but lacked the endocervical cells. Studies using multiple methodologies have attempted to determine endocervical cells in Pap tests in detection of cancer cervix, but conclusions of these studies have been often contradictory. A study conducted by Lizette and Doraty supported the view that the presence of endocervical cells is not necessary for a Pap smear result to be valid and may possibly represent far evidence to recommend avoiding early repeat testing for those women whose Pap smears are negative and do not contain an endocervical component.⁽¹²⁾

The mean age in the study group was 50.6 +/- 4.32 yrs. In India, the peak age for cervical cancer incidence is 55–59 years.⁽³⁾ The average duration of menopause in the study group was 3.96 +/- 4 yrs. The impact of age on patients with cervical cancer remains uncertain. Wright et al demonstrated that age is a poor prognostic factor for cervical cancer.⁽¹³⁾ Others suggested that younger age is an unfavourable prognostic factor, especially in more advanced stages.⁽¹⁴⁾

In our study, 54% patients had the smear done for discharge per vaginum, 27.4% had urinary symptoms, 4.4% had history of post menopausal bleeding and 3.5% had cancerophobia. Only 10.7% were asymptomatic where Pap smear was done as opportunistic screening when patient visited gynaecology OPD for pain abdomen or backache. Cervical cancer screening has been documented to be effective in many developed countries, but most developing countries have limited or no screening. India currently does not have any organized population based cervical cancer screening programme for asymptomatic women. Most of the cervix cancer screening undertaken in the country is mostly opportunistic screening for women who are approaching the health facility both public and private for other health reasons. India has a coverage of approximately <5% in the age group of 25 – 64 years.⁽¹⁵⁾

The smears were reported as per the guidelines specified in The Bethesda System (2001). The total

number of patients which reported negative for intra epithelial lesions were 47(41.6%). Inflammatory smears with reactive atypia were reported in 35(31%) patients. Inflammatory smears with infections including moniliasis were seen in 6(5.3%) patients. Bacterial vaginosis was reported in 5(4.4%) cases in our study group. This is in concordance with an earlier study where women of age group between 21 to 80 were studied and in which 26% reported inflammatory smear, 1% reported candidiasis and 07.6% had Bacterial vaginosis and 0.34%.⁽¹⁶⁾

Epithelial cell abnormalities were seen in 4(3.53%) cases; which is comparable to the same found by Mulay et al⁽¹⁷⁾ (1.39%), Gupta et al⁽¹¹⁾ (3.2%) ASCUS was diagnosed in 1(0.8%) patient. HSIL was reported in 1(0.8%) patient. LSIL was seen in 2(1.7%) patients. Epithelial cell abnormalities were noted in the age group 51 – 60 in concordance with an earlier study which showed the highest incidence of malignancies in the age group of 51-60 years (4.6%).⁽¹⁸⁾

The incidence of atypical glandular cells-Not otherwise specified in the present study was 0%, similar to an earlier study.⁽¹¹⁾ Chhieng et al conducted a study on the clinical significance of Atypical glandular cells in postmenopausal women. They found that the incidence of the same in postmenopausal women was 0.51%. The majority of such patients turned out to have endometrial adenocarcinoma, endocervical adenocarcinoma or endometrial hyperplasia with atypia.⁽¹⁹⁾

Atrophic smears were reported in 16(14.2%) patients in our study group. Chi square analysis test was applied to find the correlation of the presence of atrophic smears in the women with advancing age. No significant results could be obtained. (p value= 7.5) A study conducted by Fokter et al concluded that vaginal cell atrophy does not depend on the time since menopause. Rather, estradiol and BMI are associated with vaginal cell maturation and atrophy in postmenopausal women.⁽²⁰⁾

The Pap smear has some limitations, however, the most important being its limited sensitivity, between 47-62%. On the other hand, Pap smear testing also has strengths, such as wide acceptance, meeting most of the criteria for a good screening test in settings with adequate resources and having a high specificity of 60-95%.⁽¹⁰⁾

Regular population based screening using Pap smear cytology is the internationally accepted screening method for cervical cancer. The health infrastructure and organizational aspects for such a screening programme based purely on the Pap smear are not available in India at present. However, the magnitude of the problem of cervical cancer, and the potential for prevention, makes it imperative to identify a feasible strategy in the Indian settings.⁽²¹⁾

Guidelines by various societies like U.S Preventive services task force, American cancer society, American

Society for Colposcopy and Cervical Pathology, American Society for Clinical Pathology and American College of Obstetricians and Gynaecologists recommend to start screening for cervical cancer at age of 21 years and stop screening at age 65 years if prior screening is negative in average risk woman.^(22,23,24,25) As in India many postmenopausal females might never have been screened in their entire lifetime, so their visit to gynaecology OPD should be used as opportunity for cervical screening. Limitations of our study are a single centre retrospective study with a small sample size and hence the results cannot be generalized.

Conclusion

Cervical screening is one of the best defences against the development of cervical cancer. Various guidelines and recommendations are available for cervical cancer screening. In a large populous country like India with its limited resources, population screening by Pap smear is neither pragmatic nor cost effective. We cannot attempt to replicate the strategies of developed countries where population based screening is done routinely. In low resource settings single screen or two screens in lifetime may be the only feasible option. Postmenopausal patients can be offered screening whenever they visit gynaecology OPD as most of them might have never been screened.

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