Papanicolaou (Pap) Test Screening In A Tertiary Care Teaching Hospital In South India

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ABSTRACT
Background: Cancer cervix is the leading cancer among females of India. Papanicolaou cytological (Pap) test is use for detecting the early epithelial abnormalities in cervical cells.

Aim - Papanicolaou (Pap) test screening in a tertiary care teaching hospital in South India

Material and Methods: Pap smears (n=800) from January to June 2015 were evaluated by using light microscopy. For evaluating the pap smears 2001 Bethesda system for reporting cervical cytology was used in.

Results: Their mean age was 45.3 ± 4.6 years. Epithelial cell abnormality was noted in the Pap smear in 49 (5.67%) cases.

Conclusion: Pap test provides supportive evidence as a tool for screening for cervical cancer. There is a need to increase the awareness among public regarding the utility of this test so that more women will avail this test and precancerous changes in cervix can be detected before they progress to frank malignancy.

Keywords: Cervical cancer, Cytology, Epithelial cell abnormality, Papanicolaou smear.

INTRODUCTION

Cancer of uterine cervix is a leading cause of mortality and morbidity among women worldwide[1].Usually 70% or more of these cases present in stage 3 or higher at the time of diagnosis.[2] It is estimated that in India 126,000 new cases of cervical cancer occur annually.[3]

Cancer of cervix is readily preventable as it is easy to detect and treat its precursor lesions.[4] Papanicolaou cytological (Pap) test, since its introduction, has been boon, as dramatic reduction has been observed in the incidence and mortality of invasive cervical cancer worldwide.[5] This is because the Pap test detects cervical epithelial cell abnormalities which represent a spectrum of

intraepithelial lesions, from mild-to-severe dysplasia to invasive cancer5 and facilitates early diagnosis.

Aim - Papanicolaou (Pap) test screening in a tertiary care teaching hospital in South India

MATERIAL AND METHODS

In this study we have conducted Pap test in female at our tertiary care health centre that voluntarily consented to undergo this test.

Study Design – Cross Sectional Study.

Study Period - January to June 2015.

Place of study – OBGY Department of Sree Mookambika Institute of Medical Sciences, Kulasekharam, Kanyakumari.

Sample Size Calculation – $4PQ/d^2$, where P is 12^4. So total sample size is 733. But we included 800 female.

Sampling Technique is systemic random sampling.

Inclusion Criteria - Female underwent screening by Pap test irrespective of presence of co-morbid medical illnesses like diabetes mellitus, hypertension, thyroid disease, renal conditions, etc.

Exclusion Criteria – women with HIV and those who are not willing.

Those who presented with excessive white discharge per vaginum, bleeding per vaginum, irregular menstruation, pelvic pain and dysparerunia were considered as symptomatic. The Pap smear was collected with the help of a wooden spatula[6]. The smear was immediately fixed in isopropyl alcohol. In the laboratory the Pap staining was done and smears were evaluated by light microscopy using the 2001 Bethesda System for reporting cervical cytological diagnoses.[7] The epithelial cell abnormalities particularly the squamous epithelial abnormality has been categorized into atypical squamous cells (ASC) including ASC of undetermined significance (ASC-US) and ASC, cannot exclude high grade squamous intraepithelial lesions (ASC-H) and squamous intraepithelial lesion (SIL). SIL was again subdivided into low-grade squamous intraepithelial lesion (LSIL) and high-grade squamous intraepithelial lesion (HSIL). Frank invasive malignancy was termed as squamous cell carcinoma. Similarly, glandular cell abnormalities were categorized into atypical endocervical cells not otherwise specified, atypical endometrial cell not otherwise specified and atypical glandular cell not otherwise specified. Those with LSIL and HSIL were counselled and were advised to undergo colposcopic examination and biopsy for histopathological examination.

Statistical test used are mean, SD.

Institutional Research Committee and Ethical

Committee clearance was obtained.

RESULTS

Their mean age was 45.3 ± 4.6 years (range 21-59 years). Majority of the cases with an abnormal Pap smear (LSIL or HSIL), belonged to the fourth decade. Among those who underwent Pap testing, 565 (70.6%) cases were asymptomatic and the remaining cases (n=235) were symptomatic. The Pap smears were adequate and there was no other non-neoplastic or glandular cell abnormality noted apart from epithelial cell abnormality in 49 (5.6%) of the cases. All other smears were either within normal limit or with mild acute inflammatory cell infiltration. No organism could be identified in any of them apart from Doderlein bacilli evident in a few of them. Among the subjects with Pap smear abnormality, 29 were asymptomatic and 21 were symptomatic (Table 1).

Table No 1- Comparison of yield of positive and negative pap smears across various age groups

Age (years)	Symptomatic Status	Pap smear positive	Pap smear negative	Total
< 40	Asymptomatic	0	186	186
<40	Symptomatic	0	150	150
41-50	Asymptomatic	38	311	349
41-50	Symptomatic	20	56	76

>50	Asymptomatic	0	39	39
>50	Symptomatic	0	0	00
Total		58	742	800

Among subjects aged 40 years and below, none had positive result irrespective of symptom status. There were 425 (52.12%) subjects who belonged to the age group between 41-50 years.

Among them, 349 (82.11%) were asymptomatic and 76 (17.88%) were symptomatic. Pap smear was positive in this age group only. Only 39 female were aged above 50 years. The most frequent epithelial cell abnormality cytologically was HSIL [3] closely followed by LSIL [3] (Figures 1 and 2).
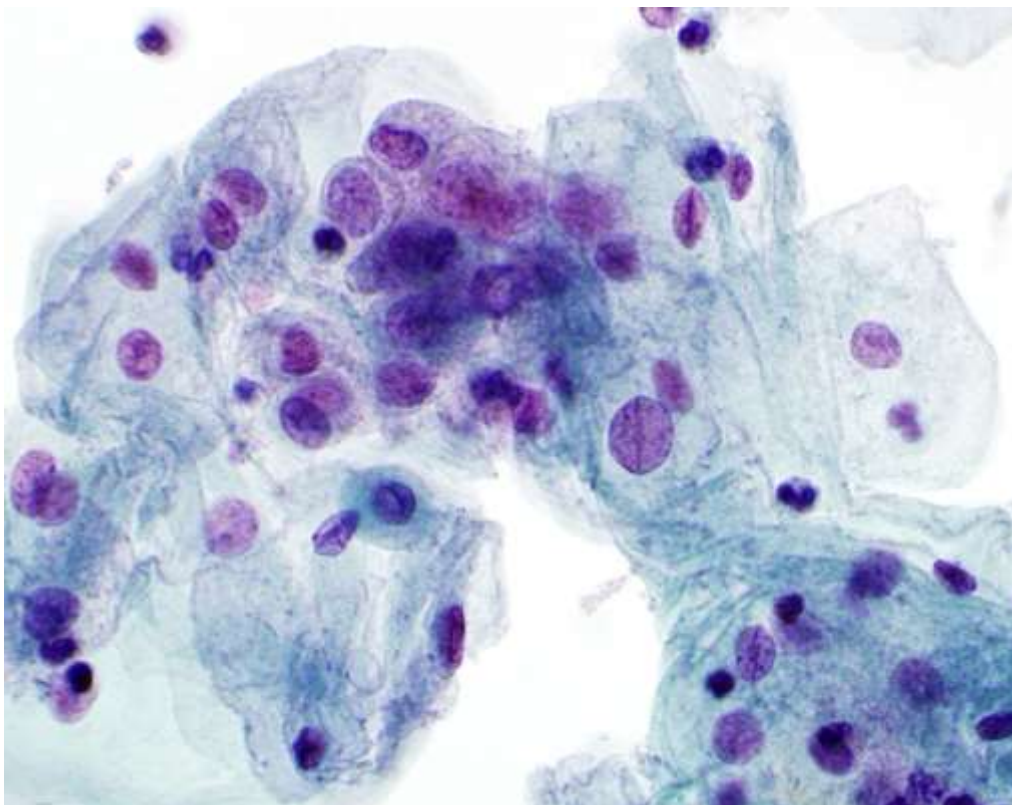

Figure 1: Photomicrograph showing low-grade squamous intraepithelial lesion (Papanicolaou X 400)
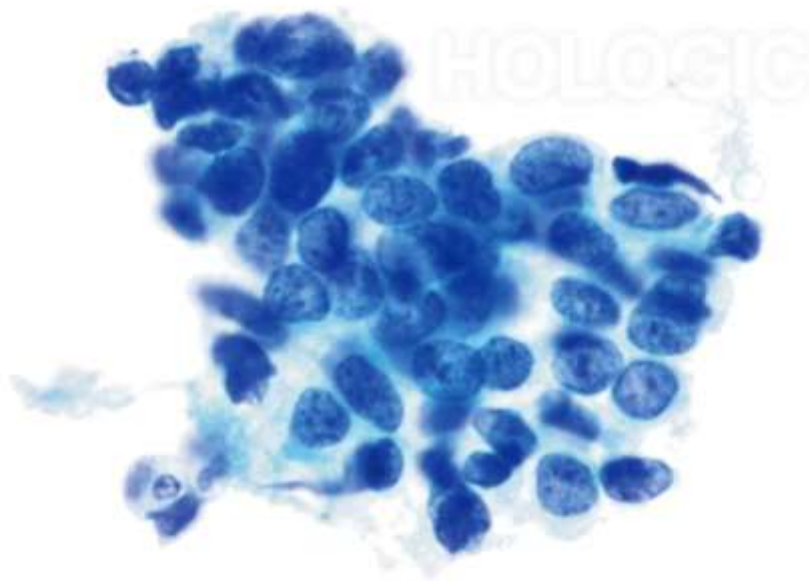
Figure 2: Photomicrograph showing high-grade squamous intraepithelial lesion (Papanicolaou, X 400)

Only 32 cases underwent cervical biopsy which did not reveal any dysplastic changes. So, they were advised regular follow up and repeat Pap smear after six months.

DISCUSSION
With the changes in the life styles and demographic profiles in developing countries, non communicable diseases are emerging as an important health problem which demand appropriate control program before they assume epidemic propagation[1]. The incidence of cervical cancer has decreased more than 50% in the past 30 years because of widespread screening with cervical cytology[8]. In India incidence rates of cancer of the cervix is very high especially in rural areas.[2] The age-standardized incidence rates have ranged from 16-55 per 100,000 women in different regions of India.[3] Although control of cervical cancer by early detection and treatment remains a priority of the National Cancer Control Programme of India, organized cytology screening programmes are definitely lacking. One possible reason is the technical and financial constraints to organize cytology screening.[3] Introduction of conventional Pap screening services reduces cervical cancer rates by 60% to 90% within 3 years of implementation; and these reductions in incidence and mortality are consistent.[9] Therefore the Pap test is designated as the "single best cancer screening procedure".[7] The past failures of cervical screening in developing countries are attributable to failures in program quality rather than to technological limitations of the screening test.[7] In fact successful implementation of Pap test screening in southern Vietnam, which recorded reductions in cervical cancer incidence from 29.2 per 100,000 in 1998 to 16 per 100,000 in 2003 reiterates these view.[10] A study from neighboring Bangladesh[5] showed a higher prevalence (8.2%) of epithelial cell abnormality in the Pap smear in contrast to other studies.[6,11,12] The authors of this study attributed this high prevalence to the fact that the patients included in the study visited the tertiary care hospital for specific gynecological complaints.[6] In a study[11] conducted at a tertiary care hospital in Kuwait, prevalence of cervical cell abnormality in

Pap smear was found to be 4.3%. Another study[13] from Saudi Arabia reported prevalence of 7.9%. In our study, 5.67% had

Cervical cell abnormality in Pap smear. A recent study[14] conducted in Ningen Dock, Japan aimed to determine the gynecological status of asymptomatic women who attended the hospital for health check-up, showed a low prevalence cervical cell abnormalities of 1.2%. The explanation behind this result is mostly because of their cultural traditions and great concern regarding their health check-ups and less likelihood of having multiple sexual partners. In a study[15] conducted at Lucknow, India, incidence of SIL was found to be 5.9% while cervical malignancy was seen in 0.6% of cases. The study[15] highlighted the immense utility of cytological screening in minimizing the incidence of carcinoma cervix in the segment of the urban population screened, as the incidence dropped down to 0.5% in the second half from 1.1% noticed in the first half of the screening period. Our study shows a higher incidence and also indicates the need and importance of cervical screening. It also directs and gives us the scope to conduct further studies regarding the early detection of cervical cancer. In another study[16] conducted in primary health centre, East Sikkim, incidence was found to be less than 1%.This was a population based cross-sectional study in cervical cancer screening. Our study was conducted in women attainting our tertiary care health facility, 5.67% had abnormal cervical smears. This also indicates the need for screening awareness to disseminate to the lay population at large. The Pap smear as a screening tool has great importance and is widely used routine test which enables proper management at an early stage by detecting the early cervical changes.

Conclusions

We conclude that regular counseling and screening should be conducted among vulnerable age groups.

Recommendation

Better awareness should be created with the co-operation of media, non-government organizations, government and above all with the active participation of the people concerned to treat this cancer which can be detected at an early stage.

Limitations

This is hospital based study. So we can not apply results to general population. As each unit in the study have not get equal chance of selection to be include in this study.

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