



Original Research Article

Spectrum of Exfoliative Cytology in Postmenopausal Woman, Attending in Tertiary Care Hospital, at P.M.C.H, Patna

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Abstract

Objective: Cervical cancer is a preventable disease in the vast majority of woman. Exfoliative cytology still remains the most effective screening tool for preventing various affliction of the female genital tract. The aim of present study was to determine the clinicopathological significance of exfoliative cytology in postmenopausal woman.

Materials and Methods: A total of 82 postmenopausal woman, attending in Obstetrics and Gynecology OPD presenting with various gynecological complains of mucoid or mucopurulent vaginal discharge, chronic backache, lower abdominal pain, Irregular vaginal bleeding, post coital bleeding, pain during coitus and dysuria were included in study. All the data regarding age, religion. Socioeconomic status, parity, locality and presenting complains of the patients were noted. From all the patient pap smear were taken and send for cytological evaluation in our department. All the fixed smears were stained by papanicolaou stain and seen under microscope.

Result: Out of 82 patient, underwent exfoliative cytology, 67.07% patients were seen in 51-55 years of age, maximum number of patient belonged to Hindu community (60.97%). Low socioeconomic status (56.09%), multiparity (71.95%) and Rural based (63.41%). Majority of patients complained of lower abdominal pain (82.92%), followed by chronic backache (74.39%), vaginal discharge (46.34%) and (25.60%) had Irregular vaginal bleeding. In exfoliative cytological finding maximum patients were (40.24%) found to have Negative for intraepithelial malignancy (NILM), Atypical squamous cell of undetermined significance (ASCUS) was seen in 29.26% of cases, 19.51% patients had Low grade squamous intraepithelial lesion (LSIL), 9.57% patients showed High grade squamous intraepithelial lesion (HSIL) and 1.21% patients were diagnosed as squamous cell carcinoma (SCC). Bacterial vaginosis was the most common infection found in 34.14% of patients followed by fungal (*Candida albicans*) 9.75%, Protozoa (*Trichomonas*) in 4.87% of patients and mixed infection in 14.63% of cases. Maximum number of patients had only mild dysplastic changes and were seen in 45-55 year of age groups. In correlation of parity with dysplasia ASCUS was most common in 1-3 children group, LSIL was most common in 4-6 children group and HSIL was noticed mostly in 4-6 children group.

Conclusion: Malignancy is a dreaded disease of mankind involving significant population of the world. Despite breakthrough advances in medical science, mankind is practically helpless against malignancy. The morbidity and mortality caused by malignancy is immense. Even with advanced and expensive therapy we have only been able to postpone the consequences of malignancy. Moreover in a developing country like ours, with major bulk of population below poverty line, only a few get access to such therapy. Therefore simple and economically viable tests like exfoliative cytology were prescribed to detect early cervical cancer.

Keywords: Exfoliative cytology, cervical cancer, postmenopausal woman, screening.

Introduction

Exfoliative cytology is the study of shedded or fallen out of cells and it is helpful in cytodiagnosis of gynecological and non-gynecological diseases. Epithelial cells exfoliating within the cavities of various organs, such as the vagina, uterus, lung, esophagus, stomach, sigmoid colon, urinary bladder, and others, may be detected and studied microscopically in properly fixed and stained smears prepared from fluid aspirated from these cavities. If the smears are fixed immediately, the cells, though they may be dead or partially degenerated, retain their structural characteristics to a degree permitting identification as to their origin and their type.

George N Papanicolaou introduced cytology as tool to detect cancer and precancerous lesions in 1928. It is now widely accepted method for mass screening in asymptomatic population. Many European countries have achieved reduction in incidence of cervical cancer by systematic pap smear screening of the population.

Demographic and epidemiological transitions and changes in lifestyle are leading to the emergence of cancer and other chronic diseases as public health problems in India. Cancer pattern in different parts of the country reveal that majority of cancer cases are present in advanced stage and makes treatment options prolonged and expensive. Therefore, emphasis has been laid on prevention, early detection, enhancement of therapy facilities and provision of pain relief and palliative care.

The accuracy of the cytological examination from anybody site depends greatly on the quality of collection, preparation, staining and interpretation of the material. Inadequacy in any of these steps will adversely affect the quality of diagnostic accuracy.

Exfoliative cytology is done for various diseases affecting the female genital tract. It can be Inflammatory (Bacterial, Viral, Fungal and Parasite), Degenerative or retrogressive, Cytohormonal changes and Neoplastic

Cervical cancer is considered preventable, as the premalignant stages can be detected by exfoliative

cytology like a Papanicolaou (Pap) smear examination. Nowadays, cytology along with Human Papilloma Virus (HPV) testing is being assessed as a screening test for cervical cancer HPV is detected by DNA polymerase chain reaction (PCR) or Hybrid capture (HC).

According to the 2001 Bethesda System for reporting cervical cytological diagnoses, epithelial cell abnormalities originate in the squamous or glandular cells. The category of atypical squamous cells (ASC) includes ASCUS (ASC of undetermined significance) and ASCH (ASC, cannot exclude high grade squamous intraepithelial lesions). The positive predictive value for HSIL (High-grade squamous intraepithelial lesion) in ASCH is higher than in ASCUS, but not as high as in the category of HSIL. The generic term squamous intraepithelial lesion (SIL) is subdivided into lesions showing perinuclear halo and mild dyskaryosis, termed as Low-grade squamous intraepithelial lesion (LSIL) and lesions showing moderate-to-severe dyskaryosis and carcinoma in situ, termed as HSIL. The category of "atypical glandular cells" is designated as AGC. Smears showing no epithelial abnormalities are depicted under the category of Negative for intraepithelial lesion or malignancy (NILM), in the revised Bethesda system.

Screening with Pap smear has been seen to be accompanied by a dramatic reduction in the incidence of invasive cervical cancer. Standardization of the Pap smear reporting by the use of the revised Bethesda System has unified various overlapping terminologies and has included specific statements regarding specimen adequacy, general categorization, interpretation, and results.

Hence, we have undertaken the Keeping in mind all of the controversies regarding the accuracy of exfoliative cytology in predicting cancer and precancerous state, our aim in this study would be to reduce morbidities and mortalities from cervical cancer which is more prevalent in postmenopausal women.

Materials and Method

Present study was carried out in the Department of pathology, Patna Medical College, Patna, with the help of Obstetrics and Gynecology Department, during the period of June 2016 to May 2018. A total of 82 postmenopausal woman, attending in obstetrics and Gynecology OPD presenting with various gynecological complains of mucoid or mucopurulent vaginal discharge, chronic backache, lower abdominal pain, Irregular vaginal bleeding, post coital bleeding, pain during coitus and dysuria were included in study. All the data regarding age, religion. Socioeconomic status, parity, locality and presenting complains of the patients were noted. From all the patient pap smear were taken and send for cytological evaluation in our department. All the fixed smears were stained by papanicolaou stain and seen under oil immersion microscope.

Results

Table 1 Shows age group of women underwent exfoliative cytology

Age Group	Total No. of Patients	Percentage
42-50 Years	17	20.73
51-55 Years	55	67.07
56-60 Years	6	7.31
61-65 Years	1	1.21
66-70 Years	1	1.21
71-75 Years	2	2.44
Total patients	82	

Table 2 Shows No of Patients According to religion.

Religion	Total No. of Patients	Percentage
Hindu	50	60.97
Muslim	30	36.58
Christian	1	1.21
Sikh	1	1.21
Total	82	

Table 3 Shows Socioeconomic Status of the patients

Socioeconomic status	Total No. of Patients	Percentage
Low	46	56.09
Middle	28	34.14
High	8	9.75

Table – 4 Shows parity of the patients underwent exfoliative cytology

NO. of Children	No. of patients	Percentage
NO children	1	1.21
1-3 children's	21	25.60
4-6 children's	59	71.95
>7 children's	1	1.21

Table – 5 Shows Locality of Patients from whom exfoliative cytology done

Locality	No. of patients	Percentage
Rural area	52	63.41
Urban area	30	36.58

Table – 6 Shows Symptoms of the patients

Symptoms	No. of patients	Percentage
Different types of vaginal discharge	38	46.34
Irregular vaginal bleeding	21	25.60
Bleeding or pain on coitus	6	7.31
Chronic backache	61	74.39
Lower abdominal pain	68	82.92
Dysuria	32	39.02

Table – 7 Shows exfoliative cytological finding of patients

Cytological finding	No. of patients	Percentage
NILM	33	40.24
ASCUS	24	29.26
LSIL	16	19.51
HSIL	8	9.57
Squamous Cell Carcinoma	1	1.21

Table 8 Shows different types of microbes in smears

Organism seen	No. of patients	Percentage
Bacterial Vaginosis	28	34.14
Candida albicans	8	9.75
Trichomonas	4	4.87
Mixed infection	12	14.63
No any pathogenic organism seen	30	36.58

Table– 9 Shows Dysplasia in different age groups

Age Group	Number of Patients		
	ASCUS	LSIL	HSIL
45-55 Years	21	13	6
56-65 Years	2	2	2
66 – 75 Years	1	1	0

Table 10 Shows Correlation of parity with Dysplasia.

Age Group	Number of Patients		
	ASCUS	LSIL	HSIL
No Children	1	0	0
1-3 Children	15	2	1
4-6 Children	8	14	6
More than 7 Children	0	0	1

Discussion

Irrespective of the test being used, good participation levels for the cervical cancer screening can be achieved in rural areas of developing countries by using appropriate strategies to deliver services. Communication methods and delivery strategies aimed at encouraging older, less educated women, who have less contact with reproductive services, are needed further to increase screening uptake. Therefore simple and economically viable tests are needed to detect cancer in an incipient stage when it is easily curable. Therefore exfoliative cytology has become the gold standard for screening of cervical carcinoma.

In my study maximum number of cases (67.07%) were seen in the age group of 51-55 years. Mithila Bisht, Shweta Agarwal, Deepak Upadhyay et al in their study "Utility of Papanicolaou test in diagnosis of cervical lesions: a study in a tertiary care centre of western Uttar Pradesh" showed that 42.23 % were in the age group of 31-40 years followed by 29.75 % women in 21-31 years age group and 18.39 % were in 41-50 years age group. 6.13% women and 3.5 % women were in fifth decade and sixth decade respectively. This may be due to advancing age and parity cervix undergoes trauma due to repeated child birth and infection.

In my study maximum number of cases belonged to Hindu community, comprising 60.97 % of all, followed by Muslims comprising 36.58 % of the cases. Sikhs and Christians contributed to 1.21 % each.

Maximum number (56.09%) of cases belonged to low socioeconomic group, followed by middle income group comprising 34.14% and high income group only 9.75 %.As expected lower income group comprised the maximum because of

poor hygiene and lack of safe sexual practices (use of condoms, repeated pregnancy and repeated abortions).

In my study 1.21% of patients were nulliparous. Among parous women 71.95 % had 4-6 children and 25.60% had 1-3 children. Incidence of dysplasia and even squamous cell carcinoma were highest in 4-6 children group.

Luthra 1980, Mali et al 1969, Singh et, al 1979 all opined that repeated pregnancy caused lacerations of the cervix which heals by secondary intention causing the edges to be averted. In this way the cervical canal become more patulous and allows organisms to ascend from the vagina and infect the cervical canal. This supports the theory of an infective agent in the causation of dysplasia and carcinoma cervix.

In my study maximum number of patients were from rural areas, comprising almost 63.41% of cases. This can be expected as most of the population resides in rural India, most of them deprived of basic health facilities. Pooja H. Khakhla et al in their study "Role of cytology, colposcopy and biopsy in the detection of cervical intraepithelial neoplasia" observed that 67.5 % of cases were from the urban areas while 32.5% were from rural areas.

In my study 82.92% patients complained of lower abdominal pain or discomfort and 74.39% complained of backache. The preponderance of these symptoms may be due to the associated parametritis. Vaginal discharge were found in 46.34 % of cases indicating associated cervicitis. Dysuria (39.02%), indicated urinary tract infection and probably the same organism causing cervicitis.

Mithila Bisht, Shweta Agarwal, Deepak Upadhyay et al in their study showed that most of the women had multiple symptoms. Vaginal discharge was the most common presentation (56.37%) followed by pruritus (36.31%), burning micturition (24.85%), pelvic pain (20%) and backache (17.98%).

In my study maximum patients (40.24%) were found to have NILM (Negative for intra epithelial

lesion or malignancy). Atypical Squamous Cells Of Undetermined Significance (ASCUS) was seen in 29.26 % of cases. 19.51% of cases showed low grade squamous intraepithelial lesion (LSIL), 9.57% showed high grade squamous intraepithelial lesion (HSIL) and 1.21% showed squamous cell carcinoma.

Ambedkar Raj Kulandai Velu, Banushree C Srinivasamurthy, M Balamurugan in their study of "Clinicopathologic significance of Papanicolaou smear study of postmenopausal women in a rural tertiary care center" reported insignificant lesions in 36.2% of symptomatic and 28% of asymptomatic postmenopausal women. Overall they reported 8.85% ASCUS, 17.5% LSIL, 4.5% HSIL and squamous cell carcinoma in 3.2 % of cases.

Out of 82 cases, infection was found in 52 cases. Bacterial vaginosis was the most common infection found in 34.14 % of patients, followed by Fungal (Candida) on 9.57% of patients. The interpretation of inflammatory condition in pap smear varies with different investigators. Singh et al reported 35.2 % cases with infection and Sinha et al reported 11.1% cases.

In my study maximum number of patients had only mild dysplastic changes. Maximum number of dysplastic changes were seen in 45-55 years age group. In my study 58.53% of patients showed different grades of dysplasia. Out of them 29.26 % had ASCUS, 19.51 % showed LSIL, and 9.57 % showed HSIL. Stern and Nelly (1963) reported incidence of dysplasia to be around 0.54%. According to ICMR, 2.3% of incidence of dysplasia was seen in New Delhi. Manjit Singh Bal, Rishu Goyal, Anil Kumar Suri, Manjit Kaur Mohi (2012) reported the incidence of dysplasia to be 5% in Patiala, Punjab.

Most of the women with dysplastic changes were married in early twenties and belonged to low socioeconomic group. They had their first child around a year or a year and half after marriage.

These together, low socioeconomic status and early marriage, leads to a grim situation in our country especially in Bihar, leading to early

sexual exposure and early child birth. Both these factors are high risk for cervical infection (HPV and Herpes simplex) and consequences.

Conclusion

Exfoliative cytology is a valuable investigation tool for a screening procedure in postmenopausal women. Reporting should be followed by the Bethesda system as it improves the reproducibility and helps in the identification of ASCUS and other lesions. It also plays a key role to diagnose various intraepithelial lesions and invasive lesions at an early stage and manage them properly. Motivation of postmenopausal women by media and implementation of health awareness program is very useful tool by government in the form of screening rural women and thorough investigation and follow-up of women with abnormal Pap smear can reduce the burden of cervical cancer

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