Original Article ISSN (O):2395-2822; ISSN (P):2395-2814

A Study of Pap Smears in Reproductive Age Group Women

S. Senthil Kumar[1], K. Bharathi[2]

[1]Assistant Professor, Department of Pathology, Madha Medical College & Research Institute, Chennai.
[2]Associate Professor, Department of Pathology, Madha Medical College & Research Institute, Chennai.

Received: February 2019
Accepted: March 2019

ABSTRACT

Background: The aim of the pap smear to prevent progression to cervical cancer. The Pap test, when combined with a regular program of screening and appropriate follow-up, can reduce cervical cancer deaths by up to 80%. In general, screening starts about the age of 20 or 25 and continues until about the age of 50 or 60, typically recommended every three to five years, if results are normal. **Aim:** The aim of the present study is a study of cervical pap smears was undertaken to identify the inflammatory, precancerous and cancerous lesions among women catering to the rural and urban population. **Methods:** Present study was conducted on 530 female patients above 20 years attending the Gynecology OPD in Madha Medical College, Chennai, during September 2016 to August 2018. Pap smear was collected according to guidelines. The modified Papanicolaou stain was used in this study which is still the method of choice. **Results:** Majority of the cervical pap smears were revealed nonspecific inflammation (86.9%) followed by trihomonas vaginalis (7.7%), ASCUS (5%) and carcinoma (0.1%). In inflammation, leucorrhea (89%)is the most common clinical presentation followed by inter menstrual bleeding and bleeding per vaginum (1%) being the least. In Trichomonas Vaginalis, high incidence of leucorrhea and post coital bleeding (22%) are seen and dysmenorrhea (2.5%) is the least common clinical presentation. In ASCUS and carcinoma, bleeding per vaginum is the most common clinical presentation. **Conclusion:** Community education regarding cervical carcinoma and regular screening with pap smear among reproductive age group women helps to decrease the incidence of carcinoma of cervix.

Keywords: Cervix, Pap smear, Reproductive age group.

INTRODUCTION

Pap smear is a screening as well as a diagnostic test. Pap smear was invented by Dr.George Papanicalaou (1883-1962), an American of Greek ancestory – father of cytopathology, is a study of disease in cells.[1]

The Papanicolaou test (abbreviated as Pap test, also known as Pap smear, cervical smear, cervical screening or smear test) is a method of cervical screening used to detect potentially precancerous and cancerous processes in the cervix,[2] that aim to prevent progression to cervical cancer. The Pap test, when combined with a regular program of screening and appropriate follow-up, can reduce cervical cancer deaths by up to 80%.[3]

Pap smear screening varies from country to country. In general, screening starts about the age of 20 or 25 and continues until about the age of 50 or 60, typically recommended every three to five years, if results are normal.[3]

Name & Address of Corresponding Author
Dr. S. Senthil Kumar,
Assistant Professor,
Department of Pathology,
Madha Medical College & Research Institute,
Chennai.

The Bethesda System (TBS) for reporting cervical or vaginal cytologic diagnoses was introduced in 1988 and revised in 1991 to establish uniform terminology and standardize diagnostic reports.[4] In TBS 2001,[4] the SBLB category is eliminated, and comments about transformation zone components or partially obscuring factors are placed in the satisfactory or unsatisfactory categories as a means of providing feedback to improve specimen adequacy,[5]

Advantages of PAP smear are simple, rapid, inexpensive, no injury to the tissue, hormonal status assessment and also covers wider surface for testing than biopsy, lesion progression or post treatment regression of a lesion and nature of lesion can evaluate, Changes due to irradiation and other forms of therapies are often easier to evaluate.

Limitations of PAP smear are need expertise to diagnose the lesion, HPE is confirmatory test, location, type and size of the lesion is difficult to interpret.

The aim of the present study is a study of cervical pap smears was undertaken to identify the inflammatory,

precancerous and cancerous lesions among women catering to the rural and urban population.

MATERIALS AND METHODS

Present study was conducted on 530 female patients above 20 years attending the Gynecology OPD in Madha Medical College, Chennai, during September 2016 to August 2018. After obtaining consent from study population, pap smears were screened for inflammatory, precancerous and cancerous lesions.

Patients were advised to follow these instructions before collecting pap smear:

1. Abstinence from coitus for 24hrs prior to the procedure
2. No intravaginal medication for 1week prior to the test.
3. No lubricants should be used during the procedure.
4. 12th day of cycle is ideal for taking the smear.

Pap smear collection:

For the detection of cervical anaplasia, direct cellular sampling of the endocervix and exocervix provides the greatest sensitivity and specificity.

The slides should be identified and matched with the patient's requisition, which should include the history of the patient, her age, and the dates of her last menstrual period (LMP) and her previous menstrual period (PMP).

The speculum should be introduced without lubricant. It can be dipped in warm saline solution for lubrication. The vaginal mucosa must be carefully examined for any lesion before obstructing it with the speculum.

The cervical surface should not be wiped; wiping it would remove the cell-rich adherent endocervical mucus. Using the plastic or wooden spatula, preferably an Ayre type with an elongated tip or the glass pipette with a rubber bulb, remove several drops of the secretion from the endocer¬vix and place them on the slide without smearing them .

Place the small end of the spatula in the external os of the endocervical canal as deeply as possible and rotate it 360 degrees, energetically scraping the entire surface of the external os and part of the internal os. If an Ayre spatula is not available, the tip of an ordinary wooden tongue depressor can be cut longitudinally with scissors.

The margins, and not the bottom, of a grossly ulcerated area should be carefully and energetically scraped.

The material collected from this scraping is then mixed with the endocervical mucus droplets, and the entire specimen is evenly smeared with a lateral motion rather than with a circular one. Zigzag strokes will usually produce fewer cells and offer a greater chance of air drying them. The slide is immediately dropped into the bottle of 95% ethanol fixative or sprayed before it has a chance to air dry.

All pap smears collected were transported immediately to Department of Pathology for examination.

Staining of pap smears:

The modified Papanicolaou stain was used in this study which is still the method of choice. The color differentiation of various cellular components used for the diagnosis of malignancy and cell typing is excellent with this stain. The nuclei were stained with Harris' hematoxylin (a basic stain); the cytoplasm with an alcoholic, polychromatic, eosin stain (an acid stain); and the cytoplasmic keratin, when present, with orange G. The phosphotungstic acid in the eosin staining solution determines the color of the cytoplasm.

All the details including patient history, clinical features, examination, Pap smear findings were entered into spread excel sheet and the results were analyzed.

RESULTS

In the present study, a high incidence of 200 cases (37.73%) was observed in the 4th decade followed by 190 cases (35.84%) in the 5th decade [Table 1].

Leucorrhea

In the present study, Leucorrhea is the most common clinical presentation among all age groups. High incidence of leucorrhea is seen in the 4th decade (39.15%).

Intermenstrual bleeding

In the present study, Intermenstrual bleeding is most commonly seen in the 5th decade (39.7%).

Post coital bleeding

In the present study, Post coital bleeding is most commonly seen in the 4th decade (45.5%).

Abdominal pain

In the present study, Abdominal pain is most commonly seen in the 5th decade (50%).

Bleeding per vaginum

In the present study, Abdominal pain is most commonly seen in the 5th decade (57.89%)

Dysmenorrhea

In the present study, Dysmenorrhea is the least common clinical presentation among all age groups. High incidence of Dysmenorrhea is seen in the 3rd decade (46.15%) [Table 1].

Majority of the cervical pap smears were revealed nonspecific inflammation (86.9%) followed by trihomonas vaginalis (7.7%), ASCUS (5%) and carcinoma (0.1%). In inflammation, leucorrhea (89%) was the most common clinical presentation followed by inter menstrual bleeding and bleeding per vaginum (1%) being the least. In Trichomonas Vaginalis, high incidence of leucorrhea and post coital bleeding (22%) are seen and dysmenorrhea (2.5%) is the least common clinical presentation.

In ASCUS and carcinoma, bleeding per vaginum is the most common clinical presentation [Table 2, Figure 1 -4].

Table 1: Clinical presentation and age

Age (yrs)	Leucorrhea	Inter menstrual bleeding	Post coital bleeding	Abdominal pain	Bleeding per vaginum	Dysmenorrhea	Total
21-30	108 (25.47%)	9 (30%)	9 (40.9%)	5 (22.72%)	3 (15.78%)	6 (46.15%)	140 (26.4%)
31-40	166 (39.15%)	10 (33.3%)	10 (45.5%)	6 (27.27%)	5 (26.31%)	3 (23.07%)	200 (37.7%)
41-50	150 (35.37%)	11 (39.7%)	3 (13.6%)	11 (50%)	11 (57.89%)	4 (30.76%)	190 (35.8%)
Total	424 (80%)	30 (5.6%)	22 (4.1%)	22 (4.1%)	19 (3.58%)	13 (2.45%)	530 (100%)

Table 2: Cytology and clinical presentation

Clinical Presentation	Nonspecific Inflammation	Trichomonas Vaginalis	ASCUS	Carcinoma
Leucorrhea	409	9	6	-
Inter menstrual bleeding	21	7	2	-
Post coital bleeding	11	9	2	-
Abdominal pain	6	9	7	-
Bleeding per vaginum	4	8	8	1
Dysmenorrhea	10	1	2	-
Total	461	41	27	1

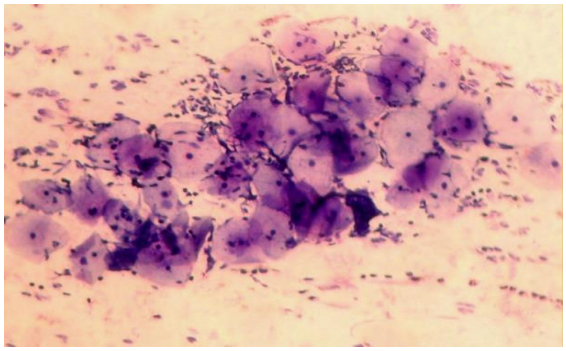

Figure 1: Inflammatory smear 10x.

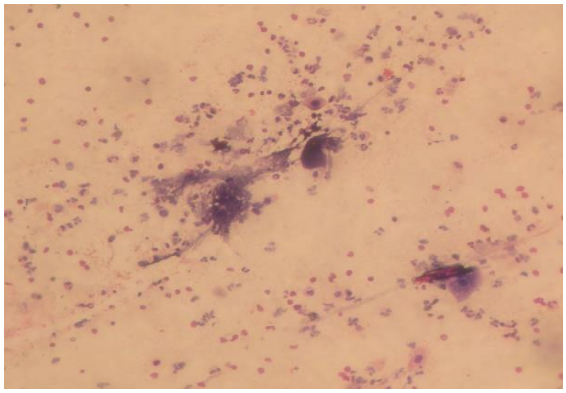

Figure 2: Trichomonas vaginalis 10x

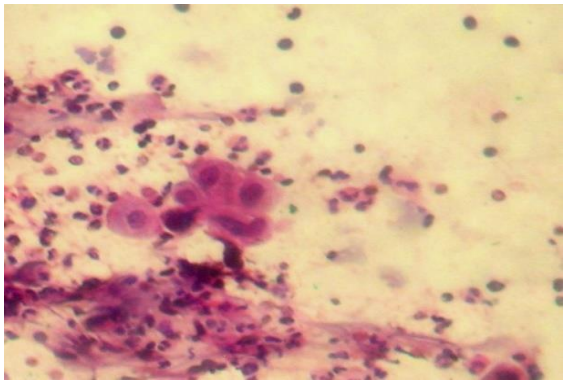

Figure 3: ASCUS 10x

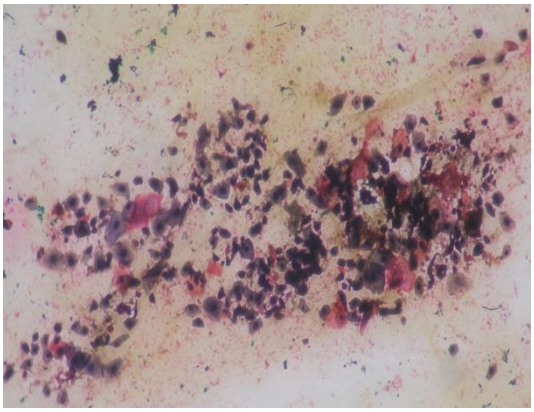

Figure 4: Squamous cell carcinoma 10x

In the present study, high incidence of inflammation was observed in the 4th decade (39.6%) followed by women in 5th decade (34.27%). Trichomonas vaginalis infection is most commonly seen in the 3rd decade (41.46%). 19 cases (70.37%) of ASCUS and 1 case of Carcinoma in the 5th decade. (Fig 5)

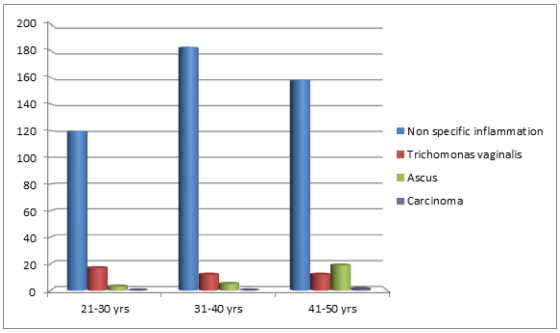

Figure 5: Cytology and age

DISCUSSION

Cervical smears from 530 female patients above 20 years were screened for inflammatory, precancerous and cancerous lesions and the variables such as Age, Clinical Presentation and Cytology were compared with other studies.

In the present study (2013), High incidence of cases were present in the 4th decade (37.73%) followed by 5rd decade (35.83%). Dhiraj et al,[6] (2011) conducted study on 930 women. High incidence of cases (36.5%) was present in the 4th decade followed by 3rd decade (31%). In a study of 922 women by Mandakini et al (2011),[7] High incidence of cases (28.19%) was present in the 4th decade followed by 3rd decade (27.22%)

In the present study (2013), out of 530 women, 424 (80%) presented with Leucorrhea, 30(5.66%) with inter menstrual bleeding, 22 (4.1%) with postcoital bleeding, 22 (4.1%) with abdominal pain, 19 (3.58%) with bleeding per vaginum and 13(2.45%) with pain during menstruation.
Sania Tanveer et al (2006),[8] conducted study on 300 women, of which 41% presented with Leucorrhea, abdominal pain 10% and post coital bleeding 30%.
Dhiraj et al. (2011),[6] conducted study on 930 women, of which 69.5% presented with Leucorrhea, abdominal pain 21.6% and post coital bleeding 12.2%.
In the present study (2013), 530 women were cytologically screened. Of these, 461(86.98%) cases showed nonspecific inflammation, 41(7.73%) cases with Trichomonas vaginalis, 27(5.09%) cases with ASCUS and 1(0.2%) case with Carcinoma.
In a study of 300 women by Sania Tanveer et al (2006),[8] 32% cases were found to be inflammatory smears ,1.9% cases with ASCUS and 0.6% cases with carcinoma on cytology.
A study on 13315 women done by Maryam et al (2007),[9] revealed cases 51% with inflammatory smears, 0.9% cases with ASCUS and cases 0.2% with carcinoma on cytology.
A study on 922 women done by Mandakini et al (2011),[7] revealed 59% cases with inflammatory smears, 3.5% cases with ASCUS and 0.4% cases with carcinoma on cytology.
Dhiraj et al (2011),[6] conducted study on 930 women, which revealed inflammatory smears in 91.5%, ASCUS 3.87% and carcinoma 1.6%.

CONCLUSION

In the present study, the mean age of the patients was found to be 35.5 years. The most common presenting symptom was leucorrhoea followed by inter menstrual bleeding, abdominal pain, post coital bleeding, bleeding per vaginum, dysmenorrhea. Most of the reproductive age group women had inflammatory origin, only few cases had trichomonas vaginalis, ASCUS and Carcinoma. Community education regarding cervical carcinoma and regular screening with pap smear among reproductive age group women helps to decrease the incidence of carcinoma of cervix.

REFERENCES

1. Pap Smear: MedlinePlus Lab Test Information". medlineplus.gov. Retrieved 2018-11-07.
2. "Cervical Screening". NHS. 2017-10-20. Retrieved 2018-09-04.
3. Arbyn M, Anttila A, Jordan J, Ronco G, Schenck U, Segnan N, Wiener H, Herbert A, von Karsa L (2010). "European Guidelines for Quality Assurance in Cervical Cancer Screening. Second Edition—Summary Document". Annals of Oncology. 21 (3): 448–458.
4. Barbara S.A and Zoschnick .L, Thomas C.W: American Family Physician: The 2001 Bethesda system Terminology pg 2, Nov 2003
5. The 1988 Bethesda System for reporting cervical / vaginal cytological diagnoses. National cancer Institute Workshop. JAMA 1989; 262:931-4.
6. Dhiraj B Nikumbh, R D Nikumbh, V D Dombale3, S V Jagtap, S R Desai . Cervicovaginal Cytology: Clinicopathological and Social Aspect of Cervical Cancer Screening in Rural (Maharashtra) India. International Journal of Health Sciences & Research Vol.1; Issue: 2; Jan. 2012
7. Mandakini M Patel, Amrish N Pandya, Jigna Modi. Cervical pap smear study and its utility in cancer screening, to specify the strategy for cervical cancer control. National journal of community medicine 2011 volume 2 issue 1.
8. Sania Tanveer Khattak, Imran-ud-din Khattak, Tabassum Naheed Shehnaz Akhtar, Tanveer Jamal . Detection of abnormal cervical cytology by pap smears. Gomal Journal of Medical Sciences July– Dec 2006, Vol. 4, No. 2.
9. Maryam Afrakhteh , Nahid Khodakarami , Afshin Moradi , Ehsan Alavi M, Farshad Hosseini Shirazi . A Study of 13315 Papanicolau Smear Diagnoses in Shohada Hospital. Journal of Family and Reproductive Health Vol. 1, No. 2, Autumn 2007.

How to cite this article: Kumar SS, Bharathi K. A Study of Pap Smears in Reproductive Age Group Women. Ann. Int. Med. Den. Res. 2019; 5(3):PT01-PT04.

Source of Support: Nil, **Conflict of Interest:** None declared