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EVALUATION OF COLPOSCOPY AND PAPANICOLAOU SMEAR IN PATIENTS WITH LEUCORRHOEA

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ABSTRACT

INTRODUCTION: Leucorrhoea is the clinical evidence of infection and can be treated satisfactorily whenever diagnosed. Cervical cancer is the twelfth most common cancer in females. Papanicolaou smear (PAP smear) is a simple, safe, non-invasive and effective method for detection of pre-cancerous and changes in the cervix and vagina. Colposcopy is a worldwide accepted method for detection of early cervical neoplasia.

Aim: To evaluate the findings of the Colposcopy and Papanicolaou smear in patients with Leucorrhoea.

OBJECTIVES: 1. To study Pap smear in patients with leucorrhoea. 2. To study colposcopy in patients with leucorrhoea. 3. To compare the Pap smear and Colposcopy for diagnosing the preinvasive lesion and confirming with cervical biopsy.

METHOD: It was a Prospective Cross-sectional study in which PAP smear and colposcopy was performed in 110 women who came with complaints of Leucorrhoea and both were compared. Cervical biopsy was taken wherever required.

CONCLUSION: It is evident that colposcopy is definitely more sensitive and accurate than PAP smear. By combining Pap smear with colposcopy we can maximize the sensitivity and specificity of cancer cervix screening

KEYWORDS : Leucorrhoea, colposcopy, PAP smear, cervical biopsy

INTRODUCTION -

Leucorrhoea is the clinical evidence of infection and can be treated satisfactorily whenever diagnosed. Poor genital hygiene in Indian women has been responsible for high prevalence of excessive vaginal discharge. [1] The most common cause of leucorrhoea is infection. The cervix is both sentinel for potentially serious upper genital tract infections and a target for viral or chemical carcinogens. [2]Cervical cancer is the twelfth most common cancer among females in the United Kingdom, accounting for around 2 % of all new cases of cancer in females.[3]This decline largely is the result of many women getting PAP smear examinations, which can find cervical precancerous lesions before it turns into an invasive cancer. 12,109 women in the United States were diagnosed and 4,092 women died with cervical cancer.[4] India is the second most common cancer among women and is the primary cause of cancer related deaths in developing countries[5].Cervical cancer is the fourth most common cancer affecting women worldwide , after breast , colorectal and lung cancers[6]. Leucorrhoea is one of the major problems encountered in Gynaecological practice. The most common cause of leucorrhoea is physiological, followed by vaginal and cervical causes which include infections due to bacteria, virus, fungi and parasites. Other causes include foreign bodies, cervicitis and atrophic vaginitis and cervical cancers.[1,7,8,9]Infection of vaginal mucosa by Trichomonasvaginalis and Candida is the most common cause of leucorrhoea .These are treatable as well as preventable causes as both these infections are transmitted sexually. Although 25 % of both the infections are asymptomatic [10], chronic inflammation would be an anticipated progression to dysplasia if it remains unresolved. [8,11]

Early detection of pre-invasive disease and treatment of cervical intraepithelial neoplasia (CIN) has the potential to improve the outcome of patients. [12] Use of the PAP smear has reduced morbidity and mortality from invasive cancer in various population groups. The assumed accuracy of the PAP smear, 80 to 95% for detecting CIN and early invasive cancer, has been questioned. Conversely, a false negative rate of the PAP smear has been reported under carefully controlled condition. The simultaneous use of cytological studies and screening colposcopy has been shown to increase cervical cancer detection.[13]Conventional cervical cytology or Papanicolaou (Pap smear) is the most widely used cervical cancer screening test in the world. Cytology screening programmes in several developed countries have been associated with impressive reduction in cervical cancer burden. [14,15]

Papanicolaou (PAP) smear is a simple, safe, non-invasive and effective method for detection of pre-cancerous and changes in the cervix and vagina [16].Cancer cervix are still the single largest cause of morbidity and mortality in developing countries. This is due to almost nonexistent and ineffective cytology based screening tests. Though cytology (PAP smear) is reliable, the laboratory infrastructure, counselling, follow-up and logistic including technical expertise may not be available in low resource setting [17]. Colposcopy is a worldwide accepted method for detection of early cervical neoplasia[18].

So our study is based whether colposcopy can be used as a diagnostic tool for leucorrhoea and in screening for cancer cervix in rural India.

Aim :

To evaluate the findings of the Colposcopy and Papanicolaou smear in patients with Leucorrhoea.

Objectives:

1. To study Pap smear in patients with leucorrhoea.
2. To study colposcopy in patients with leucorrhoea.
3. To compare the Pap smear and Colposcopy for diagnosing the preinvasive lesion and confirming with cervical biopsy.

MATERIAL AND METHODS

Sample size:

110 Patients were enrolled at Gynaecology OPD with leucorrhoea over a period from September 2016- August 2017

Design

Prospective Cross-sectional study

Study period – 1 year

Informed consent was included for the women who fulfilled the inclusion criteria and enrolled in the study.

Setting:

The study was conducted in Department of Obstetrics and Gynaecology in the Acharya Vinoba Bhave rural Hospital (AVBRH), a tertiary care teaching hospital situated in the rural area of Wardha District from 2016-2017.

Inclusion criteria:

Women with age group from 21- 55 years with leucorrhoea.

Exclusion criteria:

- Pregnant women
- Active vaginal bleeding
- Women with frank growth on cervix
- Already diagnosed case of Carcinoma cervix
- Women with age group less than 21 and more than 55 years

Table 1: Age wise distribution of cases

Age Group(years)	No of Cases	Percentage(%)
20-25 years	9	8.18
26-30 years	21	19.09
31-35 years	21	19.09
36-40 years	25	22.73
41-45 years	12	10.91
46-50 years	18	16.36
51-55 years	4	3.64
Total	110	100
Mean ±SD	37.21±8.92	

Table 2: Distribution of cases according to Pap findings

Pap findings	No of Cases	Percentage(%)
Filaments	17	15.45
Hypae	4	3.64
Spores	21	19.09
Inflammatory Smear	82	74.55
Normal	3	2.73
Abnormal	4	3.64

Table 3: Distribution of cases according to negative and positive Pap findings

Pap findings	No of Cases	Percentage(%)
Negative/Normal Pap(Negative Pap)		
Normal	3	2.73
Inflammatory	82	74.55
Positive/Abnormal Pap(Positive Pap)		
Filaments	17	15.45
Hypae	4	3.64
Spores	21	19.09
Abnormal	4	3.64

Table 4: Distribution of cases according to colposcopy findings

Colposcopy findings	No of Cases	Percentage(%)
Abnormal	18	16.36
Normal	92	83.64
Total	110	100

Out of 110 cases in our study, 18 (16.36%) cases had abnormal colposcopy findings.

Table 5: Distribution of cases according to cervical biopsy

Cervical Biopsy	No of Cases	Percentage(%)
Required	19	17.27
Not Required	91	82.73
Total	110	100

In this study out of 110 cases 19 (17.27%) cases required Cervical Biopsy and underwent Cervical Biopsy.

Table 6: Distribution of cases according to diagnosis

Diagnosis	No of Cases	Percentage(%)
Bacterial Vaginosis	18	16.36
Candidiasis	21	19.09
Human Papiloma Virus	4	3.64
Trichomoniasis Vaginitis	64	58.18
Normal	3	2.73
Total	110	100.00

Table 7: Distribution of cases who required cervical biopsy

	PAP smear abnormal	Colposcopy Abnormal	Total
Number	4	14	18
Percentage(%)	22.22	77.78	100

Table 8: Distribution of cases according to cervical biopsy report

Cervical biopsy report	No of Cases	Percentage(%)
Adenocarcinoma	7	6.36
Chronic Cervicitis	11	10
Squamous cell carcinoma	1	0.91
Did not require biopsy	91	82.73
Total	110	100.00

Out of the 19 cases that underwent cervical biopsy, 7 (6.36%) cases had Adenocarcinoma, 11 (10%) had Chronic cervicitis and 1 (0.91%) had Squamous cell carcinoma.

Table 9: Agreement between PAP smear and cervical biopsy

PAP findings	No of Cases	Adenocarcinoma	Chronic Cervicitis	Squamous cell carcinoma	Did not require biopsy
Positive/ Normal	106	5(4.55%)	10(9.09%)	0(0%)	91(82.73%)
Negative/ Abnormal	4	2(1.82%)	1(0.91%)	1(0.91%)	0(0%)
Total	110	7(6.36%)	11(10%)	1(0.91%)	91(82.73%)
X2-value		43.28,p-value=0.0001,Significant			

DISCUSSION:

Women who fulfilled our criteria attended the department of Obstetrics and Gynaecology, at Acharya Vinobha Bhave Rural Hospital, Sawangi(Meghe), Wardha were included in the study. 110 patients were enrolled as cases for study and consent was taken. The cases were subjected to Per speculum examination, Pap smear and Colposcopy .Confirmatory biopsy were taken if required.

PARITY:

In the present study, parity range was from nulliparity to para 6.

SOCIO-ECONOMIC STATUS:

In present study, maximum cases 51 (46.36%) belonged to lower class, 40 (36.36%) cases belonged to upper lower class and only 19 (17.27%) cases belonged to middle class.

In the present study, we screened patients using Per Speculum examination, Pap smear and Colposcopy. All the cases underwent all the three screening test. Positive cases on any of the screening test underwent cervical biopsy. Cervical Biopsy was taken as Gold standard.

STATISTICAL ANALYSIS OF THE PRESENT STUDY:

Statistical Analysis:

Statistical analysis was done by using descriptive and inferential statistics using Chisquare test, sensitivity, specificity, PPV, NPV and

diagnostic accuracy and software used in the analysis were SPSS 22.0 version and Graph Pad Prism 6.0 version and $p<0.05$ is considered as level of significance.

Cytology/ Pap smear finding:

In the present study, Cervical Biopsy (Histopathology) was taken as gold standard. Pap smear result was compared using Chi- Square test.

The Sensitivity of Pap smear came to be 87.50% and Specificity came out to be 72.73%. The positive predictive value was 70% and negative predictive value was 88.89 %. The accuracy of Pap smear to cervical biopsy was 78.94%.

Colposcopy findings:

In the present study, the Sensitivity of Colposcopy came to be 87.50% and Specificity came out to be 81.82%. The positive predictive value was 77.78 % and negative predictive value was 90 %. The accuracy of Colposcopy to cervical biopsy was 63.15%The wide range of statistical difference was seen in the interpretation of these screening tests. These discrepancies were found because few studies used nurses or paramedical workers to do the tests. Also the study populations were different. Some studies were done on symptomatic hospital based population and others as a mass screening test. So the difference is due to observer's bias.

So, Colposcopy can be a better alternative to Pap smear as Specificity is 81.82% as compared to 72.73% in Pap smear and also the positive predictive value is more for colposcopy as compared to Pap smear.

SUMMARY AND CONCLUSION

The present study was done with the objective of studying Pap smear and colposcopy in patients with leucorrhoea. The patients enrolled in the study mainly belonged to rural areas of sawangi (Meghe), Wardha, Maharashtra .

Colposcopy performs a better diagnostic test as compared to Pap smear. The sensitivity for both the test was 87.50 % but Specificity was more in colposcopy.

Colposcopy can be used not only as a screening test for cervical cancer but can also be used to diagnose various infective cause of cervical infection.

Patients of lower socio-economic class can't afford repeated follow-up and hence colposcopy can be used as a investigation to rule out cervical cancer lesions and also as a diagnostic test for various cervical infections.

It is evident that colposcopy is definitely more sensitive and accurate than PAP smear. By combining Pap smear with colposcopy we can maximize the sensitivity and specificity of cancer cervix screening

References:

1. MisraJ.S.Daszk and Harish A cytological studies in women complaining of leucorrhoea. Journal of cytology. 14(1):11,1997.
2. RaphaëlAbauleth et al., "[Causation and treatment of infectious leucorrhoea at the Cocody University Hospital (Abidjan, Côte d'Ivoire)]," Sante (Montrouge, France) 16, no. 3 (September 2006): 191–95.
3. http://www.ons.gov.uk/ons/index.html.
4. National institutes of health. Cervical Cancer .NIH Consensus satetment.1996;14(1):1-38. U.S Cancer statistics working group. United States Cancer Statistics: 1999-2011. Incidence and Mortality Web;based report.
5. http://www.medindia.net/patients/patientinfo/cervicalcancer-incidence.
6. Bray F, Ren JS, Masuyer,Ferlay J(2013). Global estimates of cancer prevalence for 27sites in the adult population in 2008. Int l Cancer,132(5): 1133-1145. http://dx.doi.org/10.1002/ijc.27711
7. Binita Joseph Aring, PayalJaydeepMankodi, and Jasmin H. Jasani H. Jasani, "Incidence of Vaginal Candidiasis in Leucorrhoea in Women Attending in OPD of Gynecology and Obstetrics, Department, Gurugobind Singh Hospital, Jamnagar, Gujarat, India," International Journal of Biomedical and Advance Research 3, no. 12 (January 1, 2013): 867–69, doi:10.7439/ijbar.v3i12.871.
8. D.C.Dutta. Text Book of Gynaecology.5th Edition,2009. NCBA Publication.
9. [9]Howkins and Bourne Shaw's Text Book of Gynaecology.15th Edition.2011.Elsevier Publication.
10. BaharKohli , "Comparison of PAP smear and colposcopy in detection of premalignant lesions of cervix";10.5005/jp-journals-10032-1023
11. GLOBOCAN 2008 (IARC), Section of Cancer Information (8/10/2012). (WHO, 2009); GLOBOCAN 2002 database, IARC.
12. Papanicolaou GN, Traut AF: The diagnostic value of vaginal smears in carcinoma of the cervix. Am J ObstetGynecol 1941;42:192-206
13. Sukhpreet L Singh ,"A Comparison Of Colposcopy And Papanicolaou Smear : Sensitivity,Specificity And Predictive Value." bhj.org.in/journal/2000_4203_jul00/original_447
14. Sankaranarayan R, Budhuk A, Rajkumar R. effective screening programmes for cervical cancer in low and middle income developing countries. Bull World Health Organization 2001; 79: 954-62.
15. Anderson GH, Boyes DA, Benedet JL. Organization and results of cervical cytology screening programmes in British Columbia, 1955-85. BMJ 1988; 296: 975-78.
16. Khan MA, Raja FY, Ishfaq G, Tahir F, Subhan F, Mazhar B et al. PAP Smear Screening for Pre-cancerous Conditions of the Cervical Cancer Pak J Med Res 2005; 44(3): 111-13.
17. Nelson R. HPV Testing most successful method for cervical cancer screening in developing countries. N Engl J Med 2009;360:1385-94.
18. Greenberg, M. D., ReidsColposcopic Index. In Colposcopy Principles and Practice. An Integrated Text Book and Atlas (eds Apgar, B. S., Brotzman, G. L. and Spitzer, M.), WB Saunders Company, Philadelphia, USA, 2002:66–9.