

## CERVICAL SMEAR VS. HISTOPATHOLOGICAL STUDY - A COMPARATIVE STUDY ON EFFICACY OF CERVICAL SMEAR IN SCREENING OF CARCINOMA CERVIX

Shreesha Khandige<sup>1</sup>, Smitha Rao<sup>2</sup>

<sup>1</sup>Professor & HOD, Department of Pathology, Kanachur Institute of Medical Sciences, Mangalore.

<sup>2</sup>Associate Professor, Department of Obstetrics and Gynaecology, Yenepoya Medical College, Mangalore.

### ABSTRACT

#### INTRODUCTION

Cervical cancer is the third most common female malignancies worldwide.<sup>1</sup> Cervical screening is the process of detecting abnormal changes in the cervix before they can develop into cervical cancer. Conventional cervical smear has reduced mortality from cervical cancer considerably, but the problem is it has sensitivity of only 51% and false negative rate of 5-10%.

The histopathological study where a small piece of the cervical tissue is obtained either by a cone biopsy or by any other means has a very high sensitivity.

Ninety patients were chosen aged between 25 and 65 years. Comparison of cytological findings with histological counterpart was done considering histology as the gold standard.

We concluded that in a developing country like ours the cervical smear is a cost effective way of screening the patients.

#### KEYWORDS

Cervical cancer, Cervical smear, Histopathological, Cost effective.

**HOW TO CITE THIS ARTICLE:** Khandige S, Rao S. Cervical smear vs. histopathological study - A comparative study on efficacy of cervical smear in screening of carcinoma cervix. J Evid Based Med Healthc 2016; 3(4), 134-136.

DOI: 10.18410/jebmh/2016/30

**INTRODUCTION:** Cervical cancer is the third most common female malignancies worldwide.<sup>1</sup> Cervical screening is the process of detecting abnormal changes in the cervix before they can develop into cervical cancer. If the abnormal tissue or cells can be removed, then the disease can be prevented from developing. Cervical screening is thereby mainly a form of secondary prevention by aiming to detect and treat cervical neoplasia early on. Some of the tests can also diagnose the disease by identifying cancer cells that are already present. There are several methods to screen for cervical cancer.

Since the introduction of conventional cervical smear mortality from cervical cancer has reduced considerably. But the problem is it has sensitivity of only 51% and false negative rate of 5-10%.

The histopathological study where a small piece of the cervical tissue is obtained either by a cone biopsy or by any other means has a very high sensitivity and even the false negativity rate is low.

Cytology-based tests have not been as effective in developing countries, leading to investigation of cervical screening approaches more suited to low-resource settings. Different countries has different approaches. In the United States, screening is recommended for women between ages 21-65, regardless of age at sexual initiation or other high-risk behaviors.<sup>2</sup> For healthy women aged 21-29 who have never had an abnormal Pap smear, cervical cancer screening

with cervical cytology (Pap smear) should occur every 3 years, regardless of HPV vaccination status.<sup>3</sup> The preferred screening for women aged 30-65 is "co-testing," which includes a combination of cervical cytology screening and HPV testing, every 5 years.<sup>3</sup> However, it is acceptable to screen this age group with a Pap smear alone every 3 years.<sup>3</sup> In women over the age of 65, screening for cervical cancer may be discontinued in the absence of abnormal screening results within the prior 10 years and no history of high-grade lesions.<sup>3</sup>

According to the 2010 European guidelines for cervical cancer screening, the age at which to commence screening ranges between 20-30 years of age, "but preferentially not before age 25 or 30 years," depending on burden of the disease in the population and the available resources.<sup>4</sup> Currently, most European countries suggest or offer screening between the ages of 25-64. Screening is typically (and in England) offered every 3 years from ages 25-49, every 5 years from ages 50-64 and in women 65+ only in those who have not been screening since age 50 or had recent abnormal results.<sup>5</sup>

The aim of the study is to find out the suitable test for screening the population of west coast population of Karnataka.

**MATERIALS AND METHODS:** Ninety patients were chosen aged between 25 and 65 years.

Sample of cervical smear collected from both endocervical canal and squamo-columnar junction. The smears were made by scraping the cervix from the squamocolumnar junction with the help of cotton swab stick. The endocervical smears were made by rotating the swab stick in clockwise direction in squamo-columnar junction and stained by PAP stain.

Submission 26-12-2015, Peer Review 27-12-2015,

Acceptance 10-01-2016, Published 14-01-2016.

Corresponding Author:

Dr. Shreesha Khandige,

Kanachur Institute of Medical Sciences, Mangalore.

E-mail: doctorshreesha@gmail.com

DOI: 10.18410/jebmh/2016/30

The smears was followed by biopsy and was studied retrospectively.

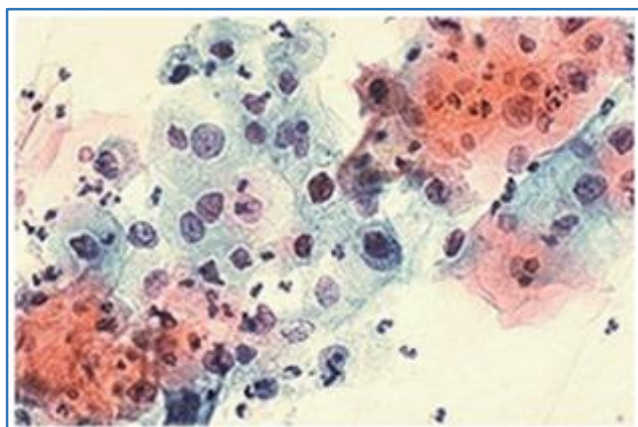
Comparison of cytological findings with histological counterpart was done considering histology as the gold standard. The reporting of PAP smears was done according to Bethesda 2001 classification and for histology WHO classification was used.

The patients belonged to the population of Coastal Karnataka and the study material was obtained from different private hospitals of Mangalore.

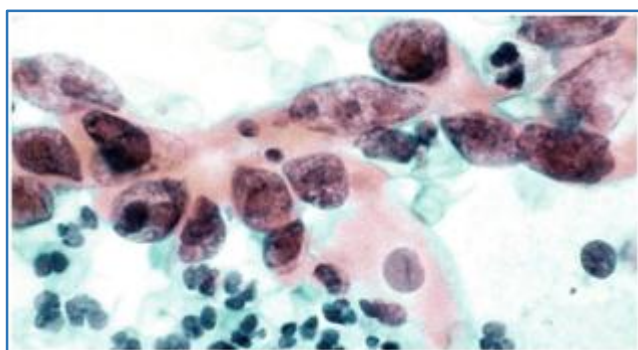
The study was done from January 2013 to March 2013.

The age distribution and parity distribution was also done.

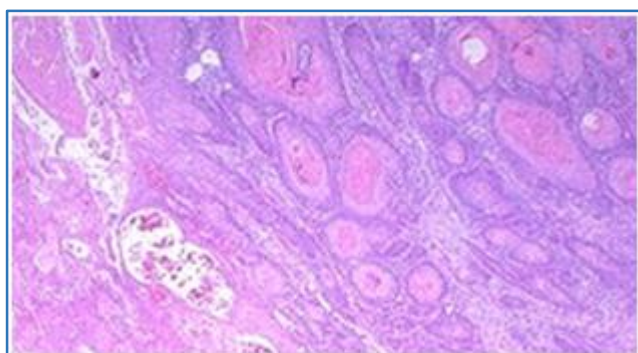
## RESULTS:



**Fig. 1: Smear showing the normal cytology of the cervix**



**Fig. 2: Hyperchromatic cells with multinuclei**



**Fig. 3: Cell Nests (Histopathology)**

Cervical smear number	Positive	Negative
90	14	76
<b>Table 1: Diagnosis based on Cervical Smear</b>		

Histopathology Number	Positive	Negative
90	19	71
<b>Table 2: Diagnosis based on Histopathology</b>		

Age	
25-35	1
35-45	4
45-55	8
55-65	6
<b>Table 3: Age distribution</b>	

Parity	
0	0
1	2
2	7
3	4
>3	6
<b>Table 4: Parity distribution</b>	

Sensitivity of the smear test was 73.68%.

Specificity of the smear test was 93.42%.

**DISCUSSION:** The squamocolumnar junction represents the transformation zone where endocervical epithelium meets the squamous epithelium. The pathology behind this is the cells lying beneath the columnar epithelium at this junction, sometimes transform into mature squamous cells: this is known as metaplasia. Metaplastic cells are normal cells without nuclear atypia and do not become malignant. However, atypical metaplasia with abnormal nuclear changes is however precursor of dysplasia and malignancy. PH changes, hormonal effect, infection and certain mutagens cause atypical metaplasia.<sup>6</sup>

In our present study, 14 out of 19 diagnosed cases were confirmed by cervical smear.

Sensitivity of the smear test was 73.68%.

Specificity of the smear test was 93.42%.

There were no false positive results which ultimately tell us that it is an effective way of screening carcinoma cervix.

The present study showed high number of cases in multiparous women and it is a known factor.

The most number of cases were reported in the fourth and fifth decade of life.

**CONCLUSION:** Even though, the gold standard test is histopathology. In a developing country like ours the cervical smear is a cost effective way of screening the patients.

**REFERENCES:**

1. John O Schorge, Joseph I Schaffer, Lisa M Halvorson, et al. Williams' Gynecology. New York: McGraw Hill Companies; 2008;2nd edition:769-792.
2. Karjane N, Chelmow D. "New cervical cancer screening guidelines, again". Obstetrics and gynecology clinics of North America June 2013;40(2):211–23.
3. Committee on Practice Bulletins—Gynecology. ACOG Practice Bulletin Number 131: Screening for cervical cancer. Obstetrics and gynecology. Nov 2012;120(5):1222–38.
4. Arbyn M, Anttila A, Jordan J, et al. "European guidelines for quality assurance in cervical cancer screening. Second edition--summary document". Annals of oncology: official journal of the European Society for Medical Oncology / ESMO, Mar 2010;21(3):448–58.
5. Everything about cervical cancer prevention". [www.ecca.info](http://www.ecca.info). Retrieved 2015-05-09.
6. Padubidri VG, Daftary SN. Gynaecological oncology. In: Howkins and Bourne, Shaw's textbook of Gynaecology, New Delhi; Elsevier, 2011;15th edition:391-432.