



SCREENING BY CYTOLOGY DURING ANTENATAL PERIOD FOR PREVENTION OF CERVICAL CANCER.

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ABSTRACT **INTRODUCTION:** Cervical carcinoma is the fourth most common cancer in the women worldwide. Early cervical carcinoma is asymptomatic hence screening plays a important role in detection. Pregnancy is the time most of the population has antenatal checkups hence screening could be done at that time which covers majority of population. Pap smear based screening is most successful in prevention of cervical cancer.

MATERIALS AND METHODS: Screening is done with pap smear for antenatal mothers and cytological evaluation done. Study is conducted in antenatal mothers who are admitted or OPD visit in Alluri Sitarama Raju Academy of Medical Sciences with sample size of 100. During the study, ethical considerations like permissions from authorities, verbal consent from the participants were taken.

RESULTS: Cytological results are as follows- 60 were normal (60 percent), 19 (19 percent) showed non specific inflammatory changes, 9 (9 percent) showed inflammatory changes with bacterial vaginosis, 8 (8 percent) showed inflammatory changes with candida, 1 (1 percent) showed inflammatory changes with trichomonas vaginalis , 1(1 percent) showed inflammatory changes with both bacterial vaginosis and trichomonas vaginalis, 1 (1 percent) showed atypical squamous cells of undetermined significance (ASCUS), 1 (1 percent) showed low grade squamous intraepithelial lesion (LSIL).

CONCLUSION: As cervical carcinoma is fourth most common cancer in women, and is asymptomatic in early stages hence screening plays a important role in early detection and plan for further treatment. Pap smear is best screening method and is cost effective. Antenatal period helps us to detect this as every mother would have a visit. Hence screening during antenatal period helps us in early detection and prevention of cervical cancer. Hence screening should be done to every antenatal mother which helps in reduction of mortality and morbidity of cervical cancer.

KEYWORDS : Cervical cancer, pap smear, ASCUS, LSIL, HSIL, antenatal, screening.

INTRODUCTION:

Cervical carcinoma was the fourth most common cancer in females worldwide and accounted for 6 lakh new cases and 3 lakh deaths worldwide in 2020⁽¹⁾. In countries that do not have access to cervical cancer screening, it remains a significant cause of morbidity and mortality. Human Papilloma virus is central to the development of cervical neoplasia and can be detected in 99 percent of cervical cancers⁽²⁾. The most common histological types of cervical cancer are squamous cell and followed by adenocarcinoma⁽³⁾.

Risk factors associated with cervical cancer are⁽⁴⁾

- Early onset of sexual activity
- Multiple sexual partners
- History of sexually transmitted infections
- Early age at first birth
- History of vulvar or vaginal squamous intraepithelial neoplasia
- Immunosuppression
- Low socioeconomic status
- Oral contraceptive use Cigarette smoking
- Genetics

Early cervical cancer is usually asymptomatic and hence screening plays important role in the detection of cervical cancer. Pap smear based cervical cancer screening is the most successful public health intervention program in cancer prevention and control. Cervical cancer rates have gone down by 90% in countries where screening is implemented successfully, and both incidence and mortality from cervical cancer has significantly decreased.

In India routine screening for cervical cancer in pregnancy is not done and hence it is difficult to make out prevalence rates of the disease in pregnancy. With increasing HPV infection and CIN in young women, cytological tests during pregnancy helps in reduction of morbidity and mortality of cervical cancer⁽⁵⁾. The anatomical accessibility of cervix to direct examination, a long preclinical stage during which precursor lesions can be treated conservatively and successfully makes cervical neoplasia ideal for secondary prevention efforts such as screening. Antenatal period is an excellent opportunity, as most young women

seek the antenatal checkups during this period and hence screening for cervical cancer can be done and counseling and awareness can be created about cervical cancer.

Pathological changes in cervical smears in pregnancy⁽⁶⁾

- Atypical metaplasia
- Cervical intraepithelial neoplasia (CIN)
- Carcinoma in situ (preinvasive)

Comparison Of Different Classification:

The original Papanicolaou classification had been compared to the WHO nomenclature and Bethesda system in the following table

Table: 1

Cytological classification (for screening)		Histological classification (for diagnosis)	
Munich	Bethesda	CIN	WHO descriptive Classification
Pap 1	Within normal limits	Normal	Normal
Pap 1	Benign cellular changes	Inflammatory atypia	Benign atypia
Pap 2	ASCUS	Squamous atypia	Atypical cells
Pap 3A1	Low-grade SIL	CIN I	Mild Dysplasia
Pap 3A2	High-grade SIL	CIN II	Moderate Dysplasia
Pap 3B	High-grade SIL	CIN III	Severe Dysplasia
Pap 4	High-grade SIL	CIN III	Carcinoma in situ
Pap 5	Micro invasive Cancer	Micro invasive Cancer	Micro invasive Cancer

Specificity and sensitivity:

The specificity of cervical screening refers to the tests ability to identify healthy individuals in the screened population. The specificity of cervical, vaginal cytology is approximately 99.8 percent. Causes of false positive reports are cervicitis, radiation and chemotherapy effects, metaplasia interpreted as CIN or carcinoma⁽⁷⁾. The sensitivity

of cervical cytology refers to detecting women with cervical neoplasia in the screening procedure. Sensitivity for the cervical, endocervical smear is about 85%.

AIMS AND OBJECTIVES OF STUDY:

Antenatal period is in which every women would have at least one visit to hospital hence screening during that period helps to identify and early detection of cervical pathologies and hence necessary treatment can be started to reduce mortality and morbidity. The main aim and objective of the study are

1. To determine prevalence and early detection of CIN lesions in pregnancy
2. Detection of abnormal Pap smears in pregnancy.

MATERIALS AND METHODS:

The study is conducted on 100 antenatal mothers who are inpatient and outpatient in department of Obstetrics and Gynecology in Alluri Sita Ramaraju Academy of Medical Sciences between January 2020 to August 2021.

Study instrument:

The investigator introduced herself to the respondents, established rapport, explained the purpose of the study, willingness of the participants was ascertained and verbal informed consent was taken. The inclusion criteria women of reproductive age group, married women, pregnancy of gestational age of five weeks to full term. Exclusion criteria include antenatal women with following history of active vaginal bleeding, excessive vaginal discharge, drainage of amniotic fluid, with noticeable and frank lesions of cervix, history of cervical cerclage in present pregnancy, women with placenta previa shown by ultrasonography, use of vaginal cream, pessary, douche, sexual intercourse in the preceding 24 hours. Detailed history regarding age at marriage, sexual practices, religion, parity, age at pregnancy, smoking, alcohol, family history, menstrual history, husband history of STD (sexually transmitted diseases), previous obstetric history is taken. The procedure, necessity, advantages of pap smear explained to the patient in their language before performing study. Patient is placed in dorsal position, external genitalia were examined with naked eye to exclude any vulvar pathology. Bivalve self retaining speculum is introduced. The cervix must be adequately visualized, gentle mucus wiping is done if necessary. Cytologic sampling is performed using Ayres Spatula, ectocervix and squamocolumnar junction was scraped by turning spatula through 360 degrees. Material was transformed on glass slide. Smears were then immediately dipped in a fixative and sent for cytological examination. Staining is done by papanicolaou stain (universal stain for cytological preparations). Harris hematoxylin stain is optimum nuclear stain. Combination of OG6 (orange G95 percent ethanol, phosphotungstic acid) and EA 0 give the subtle range of green, blue, pink hues to cell cytoplasm. The nuclei should appear blue/black. Cytoplasm should appear blue/green. Non keratinizing cells appear blue/green. Keratinizing cells appear pink/orange.

RESULTS:

The mean age of participants was 24.4 and their ages ranged from 18 to 35 years. The mean age at menarche is 13.9. The mean age at marriage is 19.7. Most of the participants were primi gravida 60 (60 percent), followed by 2nd gravida 22 (22 percent) followed by 3rd gravida 17 (17 percent) and 1 participant is 4th gravida. Cytological results are as follows- 60 were normal (60 percent), 19 (19 percent) showed non specific inflammatory changes, 9 (9 percent) showed inflammatory changes with bacterial vaginosis, 8 (8 percent) showed inflammatory changes with candida, 1 (1 percent) showed inflammatory changes with trichomonas vaginalis, 1 (1 percent) showed inflammatory changes with both bacterial vaginosis and trichomonas vaginalis, 1 (1 percent) showed atypical squamous cells of undetermined significance (ASCUS), 1 (1 percent) showed low grade squamous intraepithelial lesion (LSIL).

Table: 2

S.No	Result on Pap Smear	Number	Percentage
1	Normal	60	60
2	Inflammation with bacterial vaginosis	9	9
3	Inflammation with candida	8	8
4	Inflammation with trichomonas vaginalis	1	1
5	Inflammation with bacterial vaginosis and trichomonas vaginalis	1	1

6	Non specific inflammatory changes	19	19
7	ASCUS	1	1
8	LSIL	1	1

DISCUSSION:

Present study is compared with other studies like SETHIL⁽⁸⁾, SMC⁽⁹⁾ study and in the research conducted by SRUTHI⁽¹⁰⁾.

Cytological Smear Comparison With Other Studies

Table: 3

CYTOLOGY REPORT	PRESENT STUDY	SETHIL	SMC	SRUTHI
NORMAL/INFLAMMATORY	98(98 %)	186 (92 %)	199 (99.5%)	194 (94%)
NOT SATISFACTORY	0	12(6 %)	0	0
ASCUS	1(1 %)	1(0.5%)	0	4(2%)
LSIL	1(1 %)	1(0.5%)	1(0.5%)	2(1%)
HSIL	0	0	0	0
TOTAL	100	200	200	200

The current study, when compared with three other studies, demonstrated the following outcomes. The normal smears with or without inflammation in the study were 98 %, 92% in the SETHIL study, 99.5% at SMC Vijayawada study, 94% in the SRUTHI study.

The current study when compared with three other studies demonstrated the following outcomes. The abnormal smears (ASCUS and LSIL) in the current study were 1% & 1%, 0.5% & 0.5% in SETHIL study, 0 & 0.5% at SMC Vijayawada study, 2% & 1% in SRUTHI study. Conducted studies prove that cervical cytology performed during pregnancy is as reliable as those shown when the individual is not pregnant (Vural et al., 2004). Catching the disease will be easy and more if screening is done routinely in pregnancy. Pregnancy creates a significant opportunity to screen the cervix for neoplastic and infectious diseases and create awareness on the subject in women. Therefore, it should be placed among routine pregnancy tests. In developed countries, nurses trained on the subject of cancer early diagnosis programs have taken on an essential role in public health screening, and working in collaboration with health and social care personnel in training programs (Tessaro and Herman, 2000; Ertem, 2008; Yaren et al., 2008). Nurses have responsibilities such as: providing the necessary information about early diagnosis and prevention of cervical cancer in women, encouraging high-risk families to undergo screening, conducting smear tests, and gathering and assessing data obtained from screening. The additional benefit of cervical screening is the finding of organisms such as Trichomonas, the infection of which is associated with adverse pregnancy outcomes, particularly the premature rupture of membranes, preterm delivery, and low birth weight. This raises physicians concern for patients symptoms and the need for a prompt evaluation. However, Pap smears are not reliable for diagnosis and should not be misapplied.

CONCLUSION:

The present study's idea is to screen the women at risk, that is, sexually active women. Most of these young women seek health care during the antenatal period as a part of routine check-ups, which can be readily screened without any additional efforts. Hence the place where the study was conducted was like a catchment area for this particular target group.

Pap screening is easy to perform, cost-effective. Hence, to reduce cervical cancer incidence in our country, we must spread awareness and educate the population about the importance of cervical screening, especially in the target group.

Education in antenatal care clinics and postpartum ward would be one of the easiest ways to increase cervical cancer screening coverage among reproductive-age women.

However, the present study was limited by the population, which was too small to represent the entire population. Furthermore, this subject requires further studies.

Pregnancy offers an excellent opportunity to screen patients, and it should never be missed.

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