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Screening And Outcome of Abnormal Pap Smear in Pregnancy

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Abstract

Introduction: Pregnancy creates an important opport unity to screen the cervix for infectious and neoplastic diseases. Pap smear testing is safe and considered as the most efficient, simple and economical way for screening with no side - effect, The importance of obtaining and main taining a high coverage within the target population has been unanimously recognised

Aim: To screen and to determine the outcome of ab normal pap smears among pregnant women attending the antenatal clinics.

Methods: A prospective study was conducted in depart ment of Obstetrics and Gynecology from July 2021 to August 2022. A total of 91 antenatal women were included in the study. Ayre's spatula was used to conduct pap smear tests in this study. All smears were imme diately sprayed with a fixative and sent to the department of Pathology and reported using the Bethesda system terminology

Result: Pregnant women aged between 20- 35 years attending antenatal clinic, underwent pap smear. The pap smear report revealed that 30.7% of the subjects had in flammatory changes and for 62.6% showed negative for intra epithelial lesion, and one patient had Low-grade Squamous Intraepithelial Lesion (LSIL). In present study authors found a statistically significant association bet ween the inflammatory smear and neonatal sepsis in the new-born (p =0.037).

Conclusion: Clinicians should make effort counsel and to screen all pregnant women as Pregnancy is the period during which a woman definitely seeks medical care, and it is important to do routine microbiological screening and speculum examination to identify and treat infection at early to prevent maternal and fetal complication.

Keywords: Pap smear, inflammatory smear, low grade squamous intra epithelial lesion, speculum examination

Introduction

Pregnancy creates an important opportunity to screen the cervix for infectious and neoplastic diseases [1]

The Pap smear should be performed at the first prenatal visit regardless of the duration of pregnancy to establish the presence or absence of cervical or vaginal infection, cervical dysplasia or frank malignancy [2]

Pap smear testing is safe and considered as the most efficient, simple and economical way for screening with no side-effect, Despite the remarkable success of the Pap smear test participation rate in developing countries is 5%,[3]

The HPV infection and cervical inflammation were associated with negative obstetric outcomes such as preterm birth, premature rupture of membrane, preeclam psia, and neonatal sepsis [4]

The incidence of cervical cancer in pregnancy 0.8 to 1.5 per 10,000 births [5]. Incidence and mortality rates are increasing in developing countries due to the lack of know ledge and screening [6]

Recommendations for average-risk women include: (1) no screening until age 21, (2) cytology alone every 3 years in those aged 21 to 29 years, and (3) in women aged ≥ 30 years, three options are suitable These are human papillomavirus (HPV) plus cytology, termed co-testing, every 5 years; primary HPV testing every 5 years; or cytology every 3 years.[7]

The most important risk factors of cervical cancer are pregnancy in young ages, several sex partners, Human Immuno deficiency Virus infection, Herpes Simplex Virus (HSV), cytomegalovirus (CMV), HPV, exposure to diethyl stilbesterol during embryonic period, sexually trans mitted infections [8]

Early diagnosis enables the effective treatment of the disease, which has one of the highest chances of cure among all cancer types [9]. Pregnancy has been an associa ated with increased risk of cervical intraepithelial neo plasia. Pregnant and non-pregnant women are at similar risk for CIN and cervical cancer [10]

The importance of obtaining and maintaining a high coverage within the target population has been unanimously recognised and several studies support the ob servation that the decrease in incidence rates is more evident in countries with organized screening program mes [11]

As of today, only very few studies had been conducted in assessing the abnormal pap smear during pregnancy period and so the present study was undertaken in detecting the abnormal pap smear among the antenatal females [12]

Objectives

The objective of the study is to

1) To screen and to determine the outcome of abnormal pap smears among pregnant women attending the antenatal clinics.

Methods and materials

Source of data

After obtaining ethical committee clearance, pregnant women aged between 20- 35 years attending antenatal clinic of Navodaya medical college from July 2021 to august 2022 were included.

Study site

Navodaya medical college research Centre, Raichur

Study sample

91

Study period

July 2021 to August 2022

Sample size determination

$n= 4pq/d^2$

$= 4x6x94/5x5$

$= 91$

Inclusion criteria

- Willing to participate in the study and with written informed valid consents.
- ALL the pregnant women attending the antenatal clinic in the age group between 20 and 35 years were included for the study.

Exclusion criteria

- Those who refused to take part in the study.

- Those with abnormal result from previous screening.
- women with the history of threatened abortion, placenta previa

Methodology

Pregnant women aged between 20-35 years attending antenatal clinic of Navodaya medical college were included in the study. Interviews were carried out using a questionnaire that addressed: demographic variables; socio economic variables status; number of pregnancies; type of antenatal care and data on antenatal care regarding number of consultations and knowledge about having a Pap smear during pregnancy was recorded.

Informed consent was obtained. After emptying the bladder patient was put in dorsal potion and speculum examination was carried out, and finding was noted down. Cervical sample was collected from each pregnant woman by conventional Pap smear obtained using Ayres spatula from ec to cervix and endocervix and Cyto brush from endo cervix, immediately smeared on slide and fixed with 95% ethyl alcohol and ether.

Pap smear was reported using the Bethesda system terminology and stratified as normal, inflammation, (bacterial vaginosis, candidiasis and trichomoniasis), low grade or high grade squamous intra epithelial lesions, atypical glandular changes or Human Papilloma Virus (HPV) related changes and invasive cervical cancer.

Ab normal finding are managed as per guidelines and the women were followed up until delivery.

Data Analysis

The results of the investigation were recorded in the proforma. Data from questionnaire was collated and entered into a spread sheet for analysis using the Statis tical Package for Social Sciences (SPSS) Version 21. Des criptive and summary statistics and cross-tabulation were used to describe the data in relation to relevant variable.

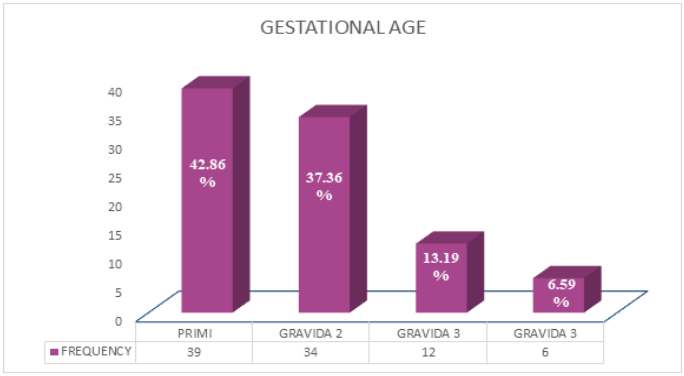
Result

Table 1: Age Wise Distribution of The Study Subjects (n=91)

Age	Frequency	%	Mean ± SD
20-25	60	65.93	25±3.2
25-30	24	26.37	
30-35	7	7.69	
Total	91	100.00	

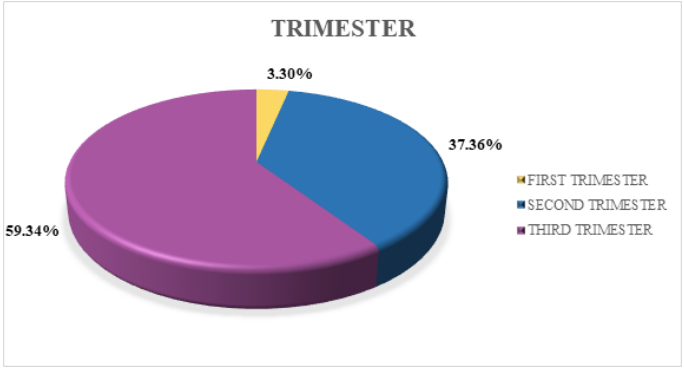
Table 1 shows the age wise distribution of the study subjects. It is seen from the table that majority of the study subjects were in the age group between 20 and 25 years with minimum age of 20 years and the maximum age was 35 years and the mean age was 25±3.2 years

Graph 1: Distribution of the study subjects based on their parity status.



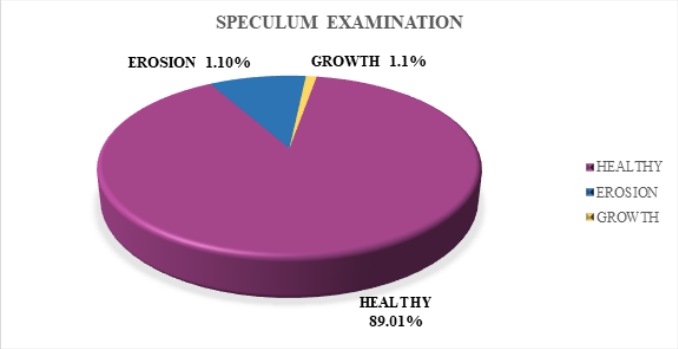
Graph 1 shows that most of present study subjects were Primi (42.86) followed by 2nd gravida (37.36), Followed by 3rd gravida (13.19) and only 6.59 of present study subjects were in the 4th gravida.

Graph 2: Distribution of the study subjects based on trimester (n= 91)



Graph 2 shows that most of the present study subjects belong to third trimester 54 (59.34 %), followed by second trimester 34 (37.36%), followed by first trimester 3 (3.30%).

Graph 3: Distribution of the study subjects based on the per speculum examination(n=91)



Graph 3 shows the most common finding of the per speculum examination was healthy cervix which was observed in 89% of the antenatal mother's and 9.89% of them had cervical erosion out of which 3 of them had hypertrophied cervix and 1 of them have Nabothian cyst and rest 5 of them have simple flat erosion. and for 1.1% of the subject's growth was seen in the cervix

Table 2: Pap smear report

PAP report	Frequency	%
Nilm	57	62.64
Inflammatory smear	28	30.77
Lisl	1	1.10
Unsatisfactory	5	5.49
Total	91	100.00

Table 2 shows the abnormalities detected in the pap smear, one low grade squamous intraepithelial lesion was detected and there were 28 inflammatory smears (30. 77 %).

The majority (62.64%) were smears with Negative for intraepithelial lesion or malignancy (NILM) and the remaining 5.49 % were unsatisfactory smears which were repeated and these all were reported as NILM

Table 3: The analysis of composite adverse obstetrical outcome

	Normal smear	Pap smear with evidence of inflammation	x2 value	P-value result
Neonatal sepsis	1	6	4.33	0.03737 Significant
Preterm labor	2	3	0.000	1.0 NS
SGA	1	5	1.5	0.2207 NS
Neonatal intensive care ad mission	2	8	3.6	0.057 NS

Table 3 shows the analysis of composite adverse obstet ri Cal outcome including preterm birth, small for gestation, neonatal sepsis, and NICU admission showed that there was significant association in people with inflammatory smear and neonatal sepsis (P 0.03737 Significant)

Discussion

Pregnancy creates an opportunity to screen the cervix for infectious and neoplastic disease to pick the disease in early stage to treat at early as possible.

several physiologic changes during pregnancy can cause difficulties in inter pretation of a smear, these effects include raised level of progesterone and oestrogen which lead to hyper plasia of the cervical glands. The endo cervical mucus becomes tenacious in pregnancy and it is associated with an increase in vaginal discharge overall, so that visibility of the cervix and interpretation may be hampered.

The Pap smear should be performed at the first visit regardless of the duration of pregnancy to establish the presence or absence of Squamous intraepithelial lesion, sexually trans mitted disease, Bacterial vaginosis, can

didiasis, and trichomonas all of which represent a risk of preterm birth, preterm rupture of membrane, sepsis, IUGR, small for gestation, and need for NICU admission and management.

In the present study screening was done on a population in which the ages ranged from 20- 35 years with a mean age of 25±3.2 years this represents the reproductive age group since the study was carried out amongst pregnant women, and this is similar to study conducted by Rashmi Ahuja et all (25.4 years) S. Senthil Priya et all (22.6 years) and Manickam B et all (26.9 years).

Table 4: Comparison of speculum examination finding with other study

Gross appearance of cervix	Present study	S. Senthil Priya et all
Healthy	89.9%	89%
Cervical erosion	9%	10%

In the present study majority of the women had apparently healthy-looking cervix (89.9%) and 9% of women had cervical erosion this is similar to the study conducted by S. Senthil Priya et all 89% of healthy-looking cervix and 10% of people with erosion, A speculum exam should be carried out in all women even in the absence of symptoms and a smear should be taken so that timely appropriate treatment in these women would result in a better maternal and perinatal outcome

In present study the incidence of abnormal pap smear was 1% (LSIL) and it was in par with the previous studies conducted by Rashmi Ahuja et all where she found abnormal Pap test in 0.9% of pregnant women (LSIL & ASCUS) and patient is managed as per guidelines.

This indicates an increasing rate of abnormal cervical cytology, which will lead to an increase in incidence of invasive cancer without an adequate screening program

Table 5: comparison of Inflammatory smear with other study

Present study	30.7%
Rashmi Ahuja et all	31.2%
Shenthil Priya et all	26%

In the present study the presence of inflammatory smears was 30.7 %. which is similar to study done by Rashmi Ahuja et al 31.2%, Shenthil Priya et all 26% and these women were asymptomatic. Thus these women should be treated with antibiotics and appropriate management should be done to prevent maternal and fetal com plication like preterm labor, premature rupture of mem brane, sepsis, intra uterine growth retardation, small for gestation, neonatal sepsis and need for NICU admission and management

Table 6: Association between Inflammatory smear and neonatal sepsis

Present study	0.03737 significant
Senthil Priya et all	0.08 not significant

In the present study the analysis of composite adverse obstetrical outcome and perinatal outcome including preterm birth and small for gestation, neonatal sepsis, and NICU admission. there was significant association between inflammatory smear and neonatal sepsis in the new-born when compared to Senthil Priya et all

The presence of bacterial vaginosis, trichomoniasis and vaginal candidiasis has been associated with poor Perin bacterial vaginosis, candidiasis and trichomoniasis at al outc ome. Routine antenatal screening for candida and trichomoniasis vaginalis and treating them has been found to be associated with a significantly lower risk of preterm birth.

Conclusion

Clinicians should make every effort to educate, screen and counsel all pregnant women as Pregnancy is the time during which a woman seeks doctor and it's

important to do routine micro biological screening of all pregnant women for early detection, and to treat them with antibiotics, for infection like bacterial vaginosis, candidiasis and trichomoniasis, and cervical changes, as they are likely to be missed even at routine speculum examination and to prevent maternal and fetal complications like preterm labor, premature rupture of membrane, sepsis, intra uterine growth retardation, small for gestation, neonatal sepsis and need for NICU admission and management.

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