International Journal of Medical and Health Research
ISSN: 2454-9142
Received: 09-04-2020; Accepted: 10-05-2020; Published: 20-05-2020
www.medicalsciencejournal.com
Volume 6; Issue 5; 2020; Page No. 48-51

Evaluation of papanicolaou smear in antenatal patients in garhwal region

Chitra Joshi[1], Deepa Hatwal[2], Alvina Rehman[3], Minakshi Singh[4*]
[1] Professor, Department of Obstetrics and Gynaecology, Government Doon Medical College, Dehradun, Uttarakhand, India
[2] Associate Professor, Department of Pathology, VCSGGMS & RI, Srinagar, Garhwal, Uttarakhand, India
[3] Junior Resident, Post Graduate Resident, SGRRIMHS, Dehradun, Uttarakhand, India
[4] Assistant Professor, Department of Obstetrics and Gynaecology, Government Doon Medical College, Dehradun, Uttarakhand, India

Abstract
Introduction: Cervical cancer is a leading cause of deaths among women worldwide. But the condition is preventable through regular screening of women and treating those who have positive results. Pregnancy represents a unique opportunity to screen reproductive age women for carcinoma cervix and abnormal cervical cytology. Pap Smear is an important screening test for cervical dysplastic cells.
Aim: The aim was to screen people with low grade epithelial abnormality, to educate them regarding hygiene, regular check-ups, importance of Pap smear at a tertiary level and healthcare centre in Garhwal region.
Material and Methods: A prospective study of the Papanicolaou Smear was done in 150 pregnant females, 18-45 yrs, presenting for their initial obstetric visits during the period July to September 2012 in General Obstetrics & Gynaecological OPD at HNB Base Hospital Srikot, Pauri Garhwal. Information was obtained using a questionnaire which included their menstrual, obstetrical and past history, and their awareness regarding risk factors. Percentage of women with risk factors for cervical cancer and those that had undertaken Pap smear test were calculated.
Results: 71 patients (47.3 %) had Normal Pap smears, & 72 (48 %) had Inflammatory Pap Smears. 5 cases were mild dysplastic (CIN I) and 2 were ASCUS. The mean age was 25.6 years (18-40 years) with 44% in the 21-25-year-old range. 68.67% of them belonged to rural area. All (100%) women received information through our study. All were Hindus.55% were primigravida and none of them had multiple sexual partners. Only 27.6% knew that having multiple sexual partners is a risk factor. Cigarette smoking, having a sexually transmitted disease/infection, oral contraceptive use, high parity and HIV/AIDS were other risk factors identified. Less than 24.3% had no idea about the risk factors. 48% were not using any contraceptive method.
Conclusion: The present study shows that Pap smear is well tolerated, not causing cervical trauma and effective for detecting cervical pathology in pregnant females but the knowledge on prevention of cervical cancer and risk factors is low, suggesting a need of extensive health education programmes.

Keywords: CIN, Pap smear, Screening

Introduction

Cervical cancer is the seventh cancer in overall frequency, but the second most common cancer among women worldwide. An estimated 493,000 new cases and 274,000 deaths occurred from cervical cancer in the year 2002 [1]. In general terms, cervical cancer is much more common in developing countries, where 83% of cases occur and where cervical cancer accounts for 15% of female cancers, with a risk before age 65 of 1.5%. In developed countries, cervical cancer accounts for only 3.6% of new cancers, with a cumulative risk (0 to 64) of 0.8% [2]. Cervical cancer is a leading cause of deaths among women worldwide. But the condition is preventable through regular screening of women those are 'at risk' for abnormal changes in the cervix and treating those who have positive results [3]. Although screening facilities are available in Garhwal region, the incidence and mortality [4] from cervical cancer remains very high and many women present to health facilities in late stages. The mortality rate of Asians was 2.8 per 100,000 based on 2000 US standard population [5]. It is estimated that 471,000 new cases of cervical cancer are diagnosed every year worldwide, 80% of which occur in less developed countries [6, 7].

Cervical neoplasia is known to be induced in different ways, such as via multiple pregnancies [8], radiation [9], smoking [10] and viral infection. HPV is regarded as the most significant risk factor for cervical carcinoma. Cancer of the cervix was identified as a sexually transmitted disease in 1834, and the hypothesis that HPV is involved was suggested in the mid-1970's [11, 12].

Pregnancy represents a unique opportunity to screen reproductive age women for carcinoma cervix and abnormal cervical cytology [13].

According to Bethesda Classification System, dysplasia is graded [14, 15] as-

1. **Mild Dysplasia (CIN-I)/ Low-grade squamous intraepithelial lesions (LSIL)** – Intermediate cells display mild dysplasia with enlarged nuclei. ASCUS (Atypical Squamous Cells of Undetermined Significance) seen.
2. **Moderate Dysplasia (CIN-II)** – The cells are mostly intermediate with moderate nuclear enlargement, hypercromasia, irregular chromatin and multiple nucleation.
3. **Severe Dysplasia and carcinoma in situ (CIN-III)** – Entire thickness of epithelium is replaced by abnormal

cells. The cytology cells are mostly parabasal with increased nuclear-cytoplasmic ratio. The nuclei are irregular, with coarse chromatin material; mitosis and multinucleation are common.

CIN-II and CIN-III are described as High–grade Squamous intraepithelial lesions (HSIL)

4. **Invasive Cancer –** HSIL have propensity to progress and become invasive.

Pap Smear is an important screening test for cervical dysplastic cells. It was introduced by Papanicolaou and Traut in 1943. It is responsible for about 76.6% reduction in the incidence of cervical carcinoma and 74.5% reduction in mortality in the United States since 1950s [16]. It can detect pre-cancerous cells in time to treat them. Routine Pap Smear screening is recommended for all women above 21 years of age who are sexually active for atleast 3 years. In healthy women, a yearly negative Pap smear for 3 years is assuring, and thereafter 5 yearly test is adequate [17].

Papanicolaou (Pap) smear test is considered the best approach to reduce cervical cancer incidence worldwide [18]. In pregnancy, the only diagnosis that may alter clinical management is invasive cancer. The presence of cancer may change treatment goals for the route and timing of delivery. Cervical cancer screening test results that are not likely to be associated with cancer may undergo colposcopic evaluation either during pregnancy or postpartum. The incidence of precancerous lesions of the cervix peak with occurrence of pregnancies within the same decade in women aged 25 to 35 years of age, antepartum care presents an opportunity to offer a Pap smear thereby increasing the coverage of the programme [19].

Aims & Objectives

- To screen people with low grade epithelial abnormality at a tertiary level and healthcare centre in Garhwal region.
- To educate the patients for maintaining good hygiene.
- To promote women to go for regular gynaecological checkups and emphasize importance of Pap Smear.
- The study objective was to describe the effect of the antepartum Pap smear on the coverage of a cytological screening programme.

Material and Methods

This was a prospective study of the Papanicolaou Smear in pregnant females (18-45 yrs of age at time of examination) presenting for their initial obstetric visits during the period July to September 2012. This study was conducted in General Obstetrics & Gynaecological OPD at HNB Base Hospital Srikot, Pauri Garhwal after considering the inclusion criteria and taking informed consent. A questionnaire was prepared for the respondents which included their menstrual, obstetrical and past history, and their awareness regarding risk factors.

Materials used were Cusco's bivalve self-retaining speculum, Cervical cyto brush, preservative, glass slides, Ayre's spatula.

This study was undertaken keeping in view the rural community of Garhwal region. The

assessment was performed by means of a questionnaire survey. Outcome measures were percentage of women with Risk factors for cervical cancer and use of Pap smear test and had undertaken Pap smear test. Binary logistic regression analysis was carried out to identify possible predictors of Pap smear test undertaken.

Observations & Result

150 pregnant females were included in this study. Pap smear examinations were well tolerated by all females.

Table 1: Pap Findings/Outcomes in respondents included in this study

Findings	% of respondents
Normal	47.33
Inflammatory	48
ASCUS	1.33
Mild Dysplasia (CIN I)	3.34
CIN II	0
CIN III	0

71 patients (47.3 %) had Normal Pap smears, & 72 (48 %) had Inflammatory Pap Smears. Significant pathology was found in 7 cases, of these cases 5 cases were mild dysplastic (CIN I) and 2 were ASCUS.

Table 2: Age group of the respondents included in the study

Age group (yrs)	No. Of respondents	% of respondents
15-20	35	23.33
21-25	66	44
26-30	22	14.67
31-35	15	10
36-40	12	8

The mean age of the sample was 25.6 years (18-40 years of age) with 44% of the respondents in the 21-25-year-old range.

Table 3: Locality of the respondents compared with their percentage

Locality	No. of Respondents	% of respondents
Rural	103	68.67
Urban	47	31.33

68.67% of them belong to rural area and 47 residents were urban population.

All (100%) of the respondents received information on Pap smear through our study. None of them knew that Pap smear is used for prevention of cervical cancer. The respondents of our study group had never heard of and had not undergone Pap smear screening before. All the respondents who were in the study group were Hindus.

Table 4: Gravida of the respondents included in the study compared with their percentage

Gravida	No. of patients
Primi	81
G2	31
G3	23
≥G4	15

55% of the respondents were primi gravida and less than half of them had 2-5 children with none of them having multiple sexual partners.

Table 5: Awareness about risk factors compared with the respondents included in the study

Risk Factors	% of patients
Multiple Sexual Partners	27.6
Smoking	17.2
STD	14.7
OCP	9.9
Parity>3 children	5.7
HIV/AIDS	1.7
Unaware	24.3

When asked about the risk factors for cervical cancer, 27.6% of respondents identified having multiple sexual partners (MSP) as a risk factor. Cigarette smoking (17.2%), having a sexually transmitted disease/infection (14.7%), oral contraceptive use (9.9%), high parity i.e. >3 children (5.7%), and HIV/AIDS (1.7%) were among other factors identified by respondents as risk factors for cervical cancer. Less than 24.3% percent had no idea about the risk factors for the disease.

About 2/3 of the women reported that they had regular menses, while rest of them reported they had irregular menses.

Table 6: Use of Contraceptives in the respondents included in the study

Type of Contraceptive	No. of respondents	% of respondents
Nil	72	48
OCPs	15	10
Cu-T	11	7.33
Barrier	52	34.67

About 48% percent of the participants said that they were not using any contraceptive method currently, among the rest most commonly used contraceptive method was barrier method (34.67%), followed by OCPs (oral Contraceptive Pills) (10%), IUDs (Intra uterine Devices) (7.33%).

Discussion-

Our study intended to screen maximum patients for cervical carcinoma, but only 150 respondents were included in the study. The reason for decrease in Sample size may be attributed to the rainy season (July to September – the time period allotted for the STS project) in hilly terrain of Uttarakhand causing recurrent landslides and frequent road blocks, due to which the patients were unable to report to hospital for their regular gynaecological checkups. The screening uptake was very poor due to a combination of inappropriate beliefs, misapprehension, and deficient knowledge. Most of the people in rural locality do not go for regular antenatal checkups due to age old customs and belief regarding child birth at home. The patient's compliance was very low, the respondents were very reluctant in giving consent for the screening test. Low level of awareness was also contributory to low Pap Smear uptake. The habit of having an annual visit to a clinician for a Pap smear appears to be firmly entrenched.

Pap smear is the screening method for the Cervical pathologies. It can detect about 60-70% of the cancer of cervix and about 70% of endometrial cancers [20]. Cervical cancer is one of the most common cancers among women worldwide [21]. Its mortality exemplifies health inequity, as its rates are higher in low- & middle-income countries [22].

We speculate that the years of socialization by the media and various organizations promoting Pap smears as an integral part of women's health care will be difficult to overcome. It is not surprising, then, that women in this study are reluctant to consider risk-based cervical cancer screening. In part, their reluctance appears to be based on a lack of knowledge about the risk factors for cervical cancer, its natural history, and the effectiveness of annual compared with triennial screening. To overcome the misperceptions and concerns expressed will require considerable education, communication, and reassurance.

In a study by Bhutia K, Puri M, *et al.* [22] done at" Department of Obstetrics and Gynecology, Lady Hardinge Medical College, Delhi, India" reported inflammatory Pap smear in 32.9% of the respondents, whereas 16.67% of women had CIN. Another study by Ma L, Bian ML, Wang XH *et al.* [23] conducted at "Department of Obstetrics and Gynecology, China-Japan

Friendship Hospital, Beijing 100029, China" reported that the inflammatory samples were 10.52%, and the samples of atypical squamous cells (ASC) in antenatal women was 5.65% and 2.97% were of low-grade squamous intraepithelial lesions (LSIL). On the other hand, in our study, more inflammatory smears were reported in 48% of cases. ASC and LSIL showed similar pattern in 1.33% and 3.33% women respectively.

The most common age group who participated in the study belong to the range 21-25 years. A study by de González *et al*, 2004 [24] depicted high parity (3 births or more) increases the risk of cervical cancer by 51% compared to women with no births. According to our study, 38 respondents (25.33%) had high parity (≥3 births), and none of them had normal Pap smear. Thus, our study correlates with the earlier one, in depicting the risk of disease higher in women with high parity. Though the rural population was reluctant in participating in the study, but 103 patients (68.67%) who participated in it belonged to rural area.

In our study, we observed that 72 women (47.33%) did not use any contraceptive method. This may be correlated to lack of awareness and misperceptions among rural population of Garhwal region. Non-use of contraceptive methods [25] can lead to worsening of the condition leading to dysplasia and invasion. Thus, importance of Pap smear screening increases in such patients, to decrease the incidence of cervical carcinoma.

The awareness of cervical cancer risk factors among the respondents was poor and it does not depend on socio-demographic factors. The prevalence of risk factors for cervical carcinoma according to the Behavioral Risk Factor Surveillance System includes a number of factors.

Inquiring about risk factors, such as sexual habits, is often embarrassing (to providers and patients), and depending upon how the risk factors are assessed, the findings can have questionable validity [26]. Additionally, some risk factors (race, for example) [27], can be poor predictors compared with other factors (such as number of sexual partners), and no adequate models exist for predicting cervical cancer.

Finally, concerns have been raised about compliance with other screening procedures, such as mammography, clinical breast examinations, and fecal occult blood testing, if the frequency of cervical cancer screening is reduced [28]. In our study other screening procedures were not included, only Pap Smear testing was done and evaluated thereafter.

Conclusion

This preliminary study shows Pap smear to be well tolerated, not causing cervical trauma and effective for detecting cervical pathology in pregnant females. There was low uptake of Pap smear test and low level of knowledge on prevention of cervical cancer and risk factors, thus warranting urgent extensive health education program for the rural communities.

There is an urgent need for an aggressive awareness campaign and the provision of a screening program nationally. Women were reluctant to engage in risk-based cervical cancer screening. In this environment, risk-based cervical cancer screening recommendations are likely to be met with resistance. Opportunistic screening, mass media campaigns and

Antenatal education can be suggested as ways of improving awareness and utilization of cervical cancer screening services. Cervical cancer screening results that suggest a high probability for CIN-2/3+ should alert the clinician that the patient in question needs immediate and thorough evaluation to rule out gynaecologic malignancy.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

References

1. Ghim S, Poasu PS, Jenson AB. Cervical cancer: epidemiology, pathogenesis, treatment and future vaccines. Asian Pacific J Cancer Prev. 2002; 3:207-214. [PubMed].
2. Shanta V, Krishnamurthi S, Gajalakshmi CK, Swaminathan R, Ravichandran K. Epidemiology of cancer of cervix: Global and national perspective. J Indian Med Assoc. 2000; 98:49-52.
3. East Afr J Public Health. 2008; 5(2):111-6. Hoque M, Hoque E, Kader SB.
4. http://www.medindia.net/patients/patientinfo/cervicalcancer-incidence.htm as assessed on 5-10-2012; Vallikad, 2006; Kurkue, and Yeole, 2006.
5. Incidence and Mortality rate 1997-2000 based on Race by American Cancer Society, 2005.
6. Comber H, Gavin A. Recent trends in cervical cancer mortality in Britain and Ireland: the case for population-based cervical cancer screening. Br J Cancer. 2004; 91:1902-1904. [PubMed]
7. Peto J, Gilham C, Fletcher O, Matthews FE. The cervical cancer epidemic that screening has prevented in the UK. Lancet. 2004; 364:249-256. [PubMed]
8. Falkenberry SS. Cancer in pregnancy. Surg Oncol Clin N Am. 1998; 7:375-397. [PubMed]
9. Nomayr A, Lell M, Sweeney R, Bautz W, Lukas P. MRI appearance of radiation-induced changes of normal cervical tissues. Eur Radiol. 2001; 11:1807-1817. [PubMed]
10. Munk C, Svare EI, Poll P, Bock JE, Kjaer SK. History of genital warts in 10,838 women 20 to 29 years of age from the general population. Risk factors and association with Papanicolaou smear history. Sex Transm Dis. 1997; 24:567-572. [PubMed]
11. Stone KM. Avoiding sexually transmitted diseases. Obstet Gynecol Clin N Am. 1990; 17:789-799.
12. Weaver BA. Epidemiology and natural history of genital human papillomavirus infection. J Am Osteopath Assoc. 2006; 106:S2-8. [PubMed]
13. Yang KY Chin Obstetrics & Gynaecological CIN and Carcinoma Cervix are rare in pregnancy. Al-Halal, Kizonh A, *et al* Arch Gynaecol Obstet. 2012; 55(3):838-848.
14. VG Padubidri, SN Daftary; Shaws Textbook of Gynaecology; 15e: 400-401
15. Alliance for Cervical Cancer Prevention, Cancer Research UK.
16. Herrere R, Monogr Natl Cancer Inst. 1996; 21:1-6.
17. Behavior Risk Factor Surveillance System, 1992-1995, 1996-1997, 1998, 1999, 2000, National Center for Chronic Disease Prevention and Health Promotion, Center for Disease Control and Prevention, 1997, 1999, 2000, 2000, 2001.
18. Int J Gynecol Cancer Gharoro EP, Ikeanyi EN. 2006; 16(3):1063-8.
19. WHO/ICO Information Centre on HPV and Cervical Cancer
20. Alliance for Cervical Cancer Prevention. "10 Key Findings and Recommendations for Effective Cervical Cancer Screening and Treatment Programs", Cervical Cancer Prevention: Fact Sheet, April
21. 2007. Available at http://www.alliance cxca.org/files/ACCP_recs_2007_factsheet_final.pdf, last
22. accessed September 8, 2012.
23. WHO/ICO Information Centre on Human Papilloma Virus (HPV) and Cervical Cancer, http://www.who.int/hpvcentre/statistics/statistics_map_ICO.pdf, last accessed November 18, 2009.
24. Bhutia K, Puri M, Gami N, Aggarwal K, Trivedi SS; Indian J Cancer Persistent inflammation on Pap smear: does it warrant evaluation. 2011; 48(2):220-2.
25. Zhonghua Fu Chan Ke Za Zhi "Pregnancy related cervical cytological changes and clinical management" Ma L, Bian ML, Liu J, Wang XH, Pang CH, Chen Y. Department of Obstetrics and Gynecology, China-Japan Friendship Hospital, Beijing 100029, China. 2011; 46(2):84-7.
26. de González *et al*, International Collaboration of Epidemiological Studies of Cervical Cancer, 2004.
27. Alliance for Cervical Cancer Prevention. "10 Key Findings and Recommendations for Effective Cervical Cancer Screening and Treatment Programs", Cervical Cancer Prevention: Fact Sheet, 2007.
28. Hoque M, Hoque E, Kader SB. Mangosuthu University of Technology, P O Box 12363 Jacobs 4026, South Africa. monjurul.hoque@kznhealth.gov.za
29. Wilkinson CE, Peters TJ, Harvey IM, Stott NC. Feasibility, reliability and women's views of a risk scoring system for cervical neoplasia in primary care. Br J Gen Pract. 1994; 44:306-308. [PubMed]
30. Bourguet CC, Gilchrist VJ, Kandula M. Correlates of screening mammography in a family practice setting. J Fam Pract. 1988; 27:49-54. [PubMed]