

Study of Socio Demographic and Microbiological Profile of Inflammatory Pap smear of Married Women in Urban Field Practice Area Bagalkot- a Cross-sectional Study

Lalita D. Hiremath, D A. Hiremath¹, Manjula R, Kulkarni KR, Santosh K Yatnatti, CH Ghattargi
Dept. of Community Medicine, ¹Dept. of Anaesthesiology, S. Nijalingappa Medical College, Bagalkot, Karnataka, India.

Abstract

Introduction: Epidemiological studies of cervical cancer have focused on behavioural variables such as “female hygiene” and douching that might be related to genital infections. Earlier reports of nonspecific genital infection/sore associated with cervical cancer suggested a link between genital tract inflammation and cervical cancer. Therefore, there is need to focus on inflammatory Pap smear.

Objectives: To study the socio demographic profile of married women with inflammatory pap smear To isolate the causative pathological organisms in Reproductive Tract Infections among them

Methodology: This study was conducted in urban field practice area of S. N. Medical College, Bagalkot during June-Aug 2012. Study population of urban practice area was 5421, with 1132 houses. We selected every fifth house for our study purpose and one married woman selected from each house & collected socio demographic profile of 225 women by using pretested & predesigned questionnaire. Out of 225 women, 14 women did not turn for investigation, so we collected sample from 211 women. All the women were referred to urban health centre for collection of sample for Pap smear & culture. The sample was sent to pathologist & microbiologist respectively for reporting & isolation of organism. All pregnant women, known case of Ca Cervix, previously hysterectomised patient were excluded from the study. The data was tabulated and analysed using Microsoft excel.

Results and discussion: Out of 122 inflammatory smears most common age group affected was 26-35 yrs., with class II socioeconomic status, in which 75 were multipara. The most commonest organisms isolated were staphylococcus (24) and E coli (23)

Conclusion: A check on the inflammatory Pap smear is needed as a routine screening test in order to prevent cervical cancer.

Introduction

Cervical cancer is the third most commonly diagnosed cancer and the fourth leading cause of cancer death in women worldwide, accounting for 9% (529,800) of the total new cancer cases and 8% (275,100) of the total cancer deaths among females in 2008. More than 85% of these cases and deaths occur in developing countries [1]. Its mortality exemplifies health inequity, as its rates are higher in low & middle-income countries (LMICs), and in low socio-economic groups within countries.

Every woman has the right to cervical screening at least once in her lifetime [2]. 'Once in a lifetime'

screening would result in reduction of 20-30% in the lifetime risk of cervical cancer. This approach could also be one of the options for the limited resource conditions[3].

World over, Pap smear has been the standard test for screening of cervical cancer and its precursors. However, it suffers from low sensitivity and has a high false negative rate of 9%-40%. [3,4,5]. Inflammation on Pap smear is considered a relatively benign finding. However, due to the low sensitivity and high false negative rate of Pap smear there is a possibility that an inflammatory Pap smear may miss cervical premalignant changes. Since the incidence of

Address for Correspondence

Dr. Lalita D. Hiremath, Professor, Department of Community Medicine
S. Nijalingappa Medical College, Bagalkot-587102, Karnataka, India.
E-mail:-dahiremath@yahoo.com

inflammation on Pap smear is very high, (14%-19%) [6,7,8,9] Epidemiological studies of cervical cancer have focused on behavioural variables such as “female hygiene” and douching that might be related to genital infections. Earlier reports of nonspecific genital infection/sore associated with cervical cancer suggested a link between genital tract inflammation and cervical cancer. Therefore, there is need to focus on inflammatory pap smear [10] Hence, this study was taken up to know the factors and organisms contributing to inflammatory Pap smear.

Objectives

To study the socio demographic profile of married women with inflammatory pap smear.

To isolate the causative pathological organisms in Reproductive Tract Infections among them.

Materials and Methods

The present cross-sectional study was carried out in the urban field practice area of Bagalkot under department of Community Medicine, S. Nijalingappa Medical College, Bagalkot. The total population under the Urban Health Centre is 5421. The parent institution had adopted Urban Health centre to provide preventive, promotive and curative services. The services include general and paediatric OPD, antenatal and postnatal care, services for under five; special clinics for tuberculosis, leprosy and filariasis are also held.

The area was selected for the following reasons.

It is under the direct control and supervision of the department of community medicine.

- It has a component of staff in position to look after the population.

- Being a training centre it is expected that the services rendered could be of better quality and people would be more co-operative.

The study was done between June-Aug 2012. Study population of urban practice area was 5421, with 1132 houses. We selected every fifth house for our study purpose and one married woman selected from each house and collected socio demographic profile of 225 women by using pretested and predesigned questionnaire. Out of 225 women, 14 women did not turn out for investigation, so we collected sample from 211 women. All the women were referred to

urban health centre for collection of sample for Pap smear & culture. The sample was sent to pathologist and microbiologist respectively for reporting & isolation of organism. Exclusion criteria: All pregnant women, known case of cancer cervix, previously hysterectomised patient were excluded in the study. Statistical Analysis: The data was tabulated and analysed using Microsoft excel. Percentages and proportions were used for representing the data.

Table 1. Distribution of Pap smear report of the study subjects

Report	Number	Percentage (%)
Normal	66	31.3
Inflammatory	122	57.8
Mild Dysplasia	3	1.4
Moderate Dysplasia	11	5.2
Severe Dysplasia	9	4.3
Total	211	100

Table 2. Distribution of study subjects with inflammatory Pap smear according to age at menarche

Age in years	Number	Percentage (%)
≤ 12	10	8.19
12-14	96	78.68
≥ 14	16	13.11
Total	122	100

Table 3. Distribution of study subjects with inflammatory Pap smear according to age at marriage

age at marriage	Numbers	Percentage %
= 15	6	4.91
16-18	42	34.42
19-21	52	42.62
= 22	22	18.33
Total	122	100

Table 6. Distribution of study subjects according to culture and sensitivity report

Culture and sensitivity report	Number	Percentage
Normal	59	48.36
Staphylococcus	24	19.67
Klebsiella	3	2.45
Streptococcus	1	0.81
E coli	23	18.85
Pseudomonas	4	3.27
Proteus species	3	2.45
Candida	3	2.45
Streptococcus fecalis	1	0.81
Citrobacter	2	1.63
Trichomonas Vaginalis	86	70.49

Table 4. Distribution of study subjects according to parity

Parity	Number	Percentage (%)
Nulliparous	6	4.91
Primipara	21	21.24
Multipara	75	61.47
Grand multipara	20	16.39
Total	122	100

Table 7. Distribution of study subjects according to clinical symptoms

CLINICAL SYMPTOM	Yes	%	No	%	Total
White discharge	60	49.1	62	51.9	122
Lower abdominal pain	7	5.7	115	94.3	122
Low back ache	32	26.2	90	73.8	122
Burning micturition	7	5.7	115	94.3	122
Infertility	5	4.09	117	96.01	122

Table 5. Distribution of study subjects according to age at first pregnancy

Age at first pregnancy	Number	Percentage(%)
= 15	1	0.81
16-18	25	20.49
19-21	34	27.86
22-24	38	31.14
25-27	10	8.196
= 27	8	6.55
Nulliparous	6	4.91
Total	122	100

Results

Out of 211 study subjects 31.3% were having normal pap smear, 57.8% showed inflammatory findings, 1.5% showed mild dysplasia, 5.2% showed moderate dysplasia, 4.3% showed severe dysplasia [Table1]. 78.68% of study subjects attained menarche at age of 12-14 years followed by 14 years (13.1%) and 12 (8.9%) [Table 2]. Commonest age at marriage of the study subjects was between 19-21 years (42.62%) followed by 16-18 years (34.42%), ≥ 22 years (18.33%) and ≤ 15 years (4.91%) [Table3]. Most of the study subjects were multiparous (61.47%), followed by primipara (21.24%), grand multipara (16.39%) and nulliparous (4.21%) [Table 4].

Majority of the study subjects were married at the age between 22-24 years (31.14%), followed by 19-21 years (27.86%), 16-18 years (20.29%), 25-27 years (8.19%), 27 years (6.55%) and nulliparous 6 (4.91%) [Table 5]. The microbiological profile of the subjects for culture and sensitivity showed the highest sensitivity for *Trichomonas vaginalis* 70.9% followed by normal findings 48.36%, staphylococcal 19.7%, *E coli* 18.85%, *pseudomonas* 3.27%, 2.45% of candida, *klebsiella*, *proteus* each, *citrobacter* 1.63% and *streptococcus fecalis* with 0.819% [Table 6]. Around 49% of the study subjects had white discharge, 26.2% had low backache, 5.7% lower abdominal pain and burning micturition and 4.09% infertility [Table 7].

Discussion

Inflammation on pap smear is a very common finding. Richter et al., (1990) [11] observed that about half a million new cases of cancer cervix are diagnosed each year worldwide, more than three quarter of which are found in developing countries. He also observed that in a number of developing countries, particularly in Africa, that cervical cancer is the leading cause of death from cancer among women. It accounts for at least 3.5% of all adult female death in many areas of the world.

Dawn C S et al., (1988) observed that cervical cancer was responsible for 39% of all cancers in women and it is considered to be the most common malignancy in women. Its prevalence in our study was 58% where as prevalence in various Indian studies was reported to vary between 70% and 80.5%. Luthra et al., (1992) [12] in a community based study by Institute of Cytology and preventive oncology in Alipur, a village

near Delhi, showed that 77% of women had gynaecological complaints and 62% were found to have abnormal (inflammatory) findings on pap smears.

The mean age of the women with inflammatory Pap smear in a study done by Bhutia et al [13] was 30.43 ± 6.1 years which is similar to our study i.e. 26-35 years. In our study most of the women belonged to class II socio economic group. Almost 80% of the women attained menarche at the age of 12-14 years the mean parity was 2.5 ± 0.9 years. The mean age at marriage in Bhutia et al [14] study was 18.9 ± 2.6 years among women with inflammatory smear which is similar to our study findings i.e. 16-21 years. In present study 60% of the women were multiparous.

In Dasari et al [10] study, 92% had non-specific inflammation and only 8% had specific inflammation due to *Trichomonas Vaginalis*, *Candida albicans* and bacterial vaginosis. Wasserheit J et al., (1989) [14] observed that cervical cancer appears to be casually related to lower reproductive tract infection from some subtype of human papilloma virus which also causes genital wart. But in our study 49% were nonspecific and in remaining specific infections *Trichomonas Vaginalis*, staphylococcus and *E. coli* were the commonest organism isolated. The most common symptom was vaginal discharge followed by pelvic pain in Dasari et al study [10], whereas in present study, vaginal discharge and low back ache.

Various factors like lack of knowledge, social taboos, poor socio-economic status, illiteracy, women's place in the society, and inadequate facilities for care had made these gynaecological problems among women appear like an iceberg. Three quarter of prevalence remained unrevealed and only a smaller fraction of problem is facilitated, if the cold statistic are to be believed as revealed to recent studies including this study nearly three fourth of the married women in a given population suffer with one or more gynaecological problems. Therefore this severe burden in the community and merits special services which in turn require greater attention, resources and sincere efforts. There is not only urgent need for more effective measures but also requires an evaluation of strategy which may be less expensive but effective and efficient on prevalence of gynaecological morbidity and stimulation of community response. One would not afford to forget with the increasing population and women being the most vulnerable group, recognition of her health needs make this as a major public health problem.

Conclusion

In our study the prevalence of inflammatory Pap smear was 58%. Pap smear in inflammatory stage can be reversed with proper treatment modalities and can limit progression into cancer. A check on the inflammatory Pap smear is needed as a routine screening test in order to prevent cervical cancer.

Limitations of study

Study subjects were small in number. Antibodies for Human Papilloma Virus not taken up in the study.

Recommendation

To create awareness regarding the early signs and symptoms of gynaecological morbidities among women.

To increase literacy status of women to boost her confidence for decision making in seeking medical advice.

· Treatment of conditions at the earliest and referral services should be a priority in health care delivery system.

· Health education regarding the importance of sex and personal hygiene, for specific target groups such as commercial sex workers.

· National and State Government should recognise gynaecological disorders as problems of high priority for the individuals for the community and for the natural development.

References

1. Jemal A, Bray F, Melissa MC, Ferlay J, Ward E, Forman D. Global Cancer Statistics. *Ca Cancer J Clin* 2011; 61(2): 69–90.
2. Alliance for Cervical Cancer Prevention (ACCP) Cervical Cancer Prevention Factsheet 2007 [Serial online] [Cited on 2012 Jul 26] Available from URL http://www.alliance-cxca.org/files/ACCP_recs_2007_factsheet_final.pdf.
3. Senapathy GJ, Umadevi P, Kannika PS. The Present Scenario of Cervical Cancer Control and HPV Epidemiology in India: an Outline. *Asian Pacific J Cancer Prev* 2011; 12: 1107-1115.
4. Moss SF, Blaser MJ. Mechanisms of Disease: Inflammation and origins of cancer. *Nat Clin Pract Oncol* 2005; 2:907.
5. Kiviat NB, Paavonen JA, Brockway J, Critchlow CW, Brunham RC, Stevens CE. Cytologic manifestations of cervical and vaginal infections. I. Epithelial and Inflammatory changes. *JAMA* 1985; 253:989-96.
6. Atikson KM. benign cellular changes. In: Bonfiglio T, Erogen YS Editors. *Gynaecologic Cytopathology*. Philadelphia: Lippincot Raven Publishers; 1997. p. 33-42.
7. ACOG Practice Bulletin. Clinical management guidelines for Obstetrician and Gynecologist Cervical Cytology screening *ObstetGynecol* 2003; 102:417-27.
8. Swinker M, Cutlip AC, Ogle D. A comparison of uterine cervical cytology and biopsy results: Indications and outcome of Colposcopy. *J Fam Pract* 1994; 38:404.
9. Seckin NC, Turban NO, Ozmen S, Ersan F, Avsar F, Ustin H. Routine evaluation of patients with persistent inflammatory cellular changes on Pap smear. *Int J Gynaecol Obstet* 1997; 59:25-9.
10. Dasari P, Rajathi S, Kumar SV. Colposcopic evaluation of cervix with persistent inflammatory Pap smear: A prospective analytical study. *CytoJournal* 2010; 7:16.
11. Ritcher R, Cervical cancer. In “special challenges in third world women's health”: Presentations at the 1989 Annual meeting of the American Public Health Associations, 1990; P.8 P.148. Presentations at the 17th Annual Meeting of the American Public Health Association, Chicago, Oct 1989.
12. Luthra. Reproductive tract infections in India the need for comprehensive reproductive health policy and programs. New York Plenum Press: 1992; 317-343.
13. Bhutia K, Puri M, Gami N, Aggarwal K, Trivedi SS. Persistent inflammation on Pap smear: Does it warrant evaluation? *Indian Journal of Cancer*, 2011; 48(2): 220-222.
14. Wasserheit J. Reproductive tract infections “In special challenges in third world women's health. International Women's Health Coalition 1990; P.8 and 148.

Source of Support : Nil

Conflict of Interest : None Declared