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Original Research Article

Our seven years experience of rural cervical cancer screening in Lucknow, India

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ABSTRACT

Introduction: This study was undertaken with aim to create awareness among rural women regarding hazards and risk factors of carcinoma cervix and offering single life time cytological screening for early detection of the disease. This was essential as majority of the rural women were illiterate and have poor personal genital hygiene.

Materials and Methods: The present screening program was planned through organizing camps by counseling and motivating 100 women from each village for undergoing Pap smear examination. During last 7 years, a total of 186 camps have been organized in three Blocks of Lucknow, India and 2949 of the 5286 women attending the camps underwent Pap test. Cytological findings were analyzed in these 2949 women in relation to different risk factors of the disease.

Results: The squamous intraepithelial lesions of cervix (SIL) were seen in 498 cases (16.8%) while atypical squamous epithelial changes of unknown significance (ASCUS) were observed in only 234 (8.2%). The SIL incidence was found high for all risk factors of cervical cancer like young age, multiparity and vaginal discharge. Candida albicans was found more common and associated with inflammatory and SIL conditions of cervix.

Conclusions: The organization of rural cervical cancer screening programs through camp approach and offering single life time cytological examination of cervical smears in rural women may prove very effective in the detection of large number of SIL cases, the adequate treatment of which will check the progression of the disease and minimize the incidence of carcinoma cervix and associated mortality in rural India.

1. Introduction

Cervical cancer has been controlled to an appreciable extent in the urban population of India, but in the rural regions, the rise in incidence of the disease and the associated mortality has been cause of great concern. The situation is more alarming as 70% of the total population of India resides in the villages.[1] The rural women are mostly illiterate and poor and there is lack of awareness regarding hazards and risk factors of carcinoma cervix and importance of the early detection of the disease by cytology.[2] Consequently the cervical cancer not detected early and treated, results in women presenting the disease at an advance stage at the Hospital.[3] There is an urgent need of organizing awareness and screening programs for cervical cancer in the rural women masses which can be achieved through trained health workers and by organizing camps for the early detection of the disease through proper counseling and motivation of women in the villages.[4]

With an aim to provide the facility to detect early cases of cervical cancer to rural women, a cervical cancer screening program was initiated under the auspices of Era's Lucknow Medical College and Hospital, Era University, Lucknow in May 2013 in the villages of three blocks of western Lucknow by organizing camps. Till February 2020, a total of 186 camps were organized and 5286 women attended these camps. After February 2020, the camp activity had to be postponed due to Corona pandemic. The cervical smears

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were collected in 2949 of the 5286 women who attended the camps (54.9%) and their cytological examination revealed squamous intraepithelial lesions of cervix (SIL) in 498 (16.8%). The details of these 498 cases of SIL and their follow up findings have been analyzed and presented in this communication in the context of different predisposing factors of cervical carcinogenesis.

2. Materials and Methods

The ongoing rural cervical cancer screening program is being carried out in Malihabad, Kakori and Mall blocks of western regions of Lucknow through organizing camps. Till February 2020, 186 camps were held and 18600 women were counseled and motivated by nurses (100 houses per village). In the villages which were large and have more than 300 houses, the repeat camp was held next week. A total of 5286 women attended the 186 camps (28.9%) and cervical smears were collected in 2949 women (54.9%) who consented for undergoing Pap smear examination.

The collected smears were stained in the Cytology Lab of the Pathology Department of the College according to the Papanicolaou's technique and cervical smears were screened by the Project Coordinator (Cytologist). The cytopathological changes observed in the cervical smears were graded according to the recently revised Bethesda System of Classification of 2014.[5] While non-viral sexually transmitted diseases (STDs) like Candida albicans and Trichomonas vaginalis were diagnosed on their individual presence in the cervical smears, the viral STDs were diagnosed on the basis of cytomorphological changes produced by them in the cells like koilocytosis (Human papilloma virus- HPV) and ground glass appearance of nuclei and multinucleation (Herpes simplex virus- HSV).

The informed consent of the patients were obtained on the Pap smear forms as a thumb impression if illiterate or signature if literate. Ethical Clearance was obtained from the Ethical Committee of the Institute prior to starting the rural cervical cancer screening program. All the collected data were statistically analyzed applying the Chi-square test using software SS and version 22.

3. Results

Cytological examination of cervical smears in 2949 rural women who opted for Pap test at the camps revealed following findings-

Inflammatory smears	951(32.4%).
ASCUS	234 (8.2%)
SIL	498 (16.8%)
Low grade SIL (LSIL)	472(16.0%)
High grade SIL (HSIL)	26(0.8%)
Carcinoma Cervix	2(0.06%)

The SIL incidence was found to be 16.8% in the 2949 women studied which was much higher than 8.2% noticed with ASCUS. The majority of the SIL cases were LSIL (472 -16%) while HSIL was seen in only 26 cases (0.8%). In the 7 years study, only two cases of carcinoma cervix were seen in the rural women screened. Both these cases were histopathologicaly proven and received radiotherapy.

All the ASCUS and SIL cases were called for repeat smear examination after six months in the cases of LSIL and ASCUS and after three months in the HSIL cases and were offered treatment in the form of vaginal pessaries containing tablets of combined antifungal, antibacterial and antitrichomonal regimens. All the HSIL cases were also called for cervical biopsy at the Hospital to confirm the cytology report but only two of them turned up. In both, there was compatibility of cytological and histopathological diagnosis. The HSIL regressed to normal in both one year after treatment.

The remaining 24 HSIL patients who did not visit the Hospital for cervical biopsy, were followed after 6-12 months through home visits and were motivated to undergo Pap smear examination. However, only 13 of them turned up for repeat smear while remaining 11 cases did not report. Of the 13 cases followed, HSIL was found to have regressed to normal in 4, persisted in 1 and regressed to the lower grade-LSIL in the remaining 8. A second follow up after 1-2 years was available in 5 of these LSIL regressed cases while the remaining 3 LSIL and 1 persistent HSIL case did not turn up. In the 5 cases followed, regression of LSIL to normal was seen in 2 while in the 3, the LSIL persisted. Attempts are in progress to follow all the 11 HSIL cases who were yet to be followed and also in whom HSIL persisted (1 case) and regressed to LSIL and then persisted (3 cases).

All the 472 cases of LSIL were given treatment and called after six months to the Hospital for repeat smear examination but none of them turned up. When contacted, they told the financial and transport problem as the reason for not visiting to the Hospital. As the follow up is the essential part of any cervical cancer screening program, the follow up was planned in these women through personal home visits stressing them the need of follow up to see whether the LSIL has regressed to normal or still persisting or has progressed to a higher grade. As 6 monthly follow up was due in all the 472 LSIL cases, they were paid home visits in their villages and were called for repeat smear on the next day at the venue where the initial camp was held. The monetary incentive was also given to these women for purchasing the medicine. However, only 239 of them came for follow up examination (50.6%). Of the remaining 233 cases in whom follow up was not available, 61 had left the program, the reason being hysterectomy in 10 cases and pregnancy in 5 and 46 either had moved out of the village or were not traceable. The remaining 172 cases who did not respond to the home visits will be again followed after 1

year for Pap test.

The cytology reports in the 239 LSIL cases followed were as follows-

1. Regression of the lesion to normal in 187
2. Persistence of the lesion as LSIL in 49 and
3. Progression of LSIL to HSIL in the remaining 3.

The 49 cases showing persistence of LSIL and 3 showing progression of LSIL to HSIL were again given treatment and have been called for repeat smear after 1 year. The second follow up was available in 32 of the 49 persistent LSIL cases which showed regression of the lesion to normal in 17 and the persistence of the LSIL in the remaining 15. Attempts are underway to follow all the persistent and progressed LSIL cases to find out their current cytological status.

Follow up was also available in 106 of the 234 ASCUS cases (45.2%) after treatment. The follow up revealed regression of ASCUS to normal in 90 and progression to LSIL in 16. A second follow up was available in 5 of the 16 progressed cases and the LSIL was found to have regressed to normal in 4 and progressed to HSIL in 1. Attempts are in progress for the follow up of the 128 cases of ASCUS who did not turn up for repeat smear examination and also the 12 progressed ASCUS cases.

The inflammatory smears formed the major component of the cytology smears examined in the total 2949 women (951- 32.4%). The inflammation was also associated with LSIL in 178 cases (18.7%). The sexually transmitted diseases (STDs) were seen in 141 inflammatory smears (14.8%) while the inflammation was non-specific in the remaining 810 (85.2%). The pathogens seen in the inflammatory smears were mostly Candida albicans and Trichomonas vaginalis while viral infections like Human papilloma virus (HPV) and Herpes simplex virus (HSV) were very rare. All the women showing inflammatory smears were given treatment according to the associated pathogens.

The overall incidence of STDs in the cytology smears of 2949 women screened was found to be as follow-

Candida albicans	143(4.8%)
Trichomonas vaginalis	37(1.2%)
HPV	16(0.5%)
HSV	4(0.1%)

Among the non-viral infections, Candida albicans was the most common pathogen seen in the rural women followed by Trichomonas vaginalis. Among the viral pathogens, HPV was common than HSV but the incidence of both was very low. The association of these STDs with SIL is shown in Table 1. The maximum number of SIL cases were associated with Candida (21.8%) followed by trichomonal infection (13.5%). The SIL incidence with viral STDs was very high- 75% with HPV and 25% with HSV. The difference in the SIL incidence between non-viral and viral STDs was found to statistically significant (χ^2= 19.7; p< 0.001).

Table 1: SIL incidence with different STDs in 2949 rural women

Pathogen	No. of cases	SIL incidence
Candida albicans	143	41(28.9%)
Trichomonas vaginalis	37	5(13.5%)
Human papilloma virus (HPV)	16	12(75%)
Herpes simplex virus (HSV)	4	1(25%)

Among the 2949 rural women registered, 2015 were symptomatic (68.3%) while remaining 934 were asymptomatic (31.7%). The ASCUS and SIL rate in these two groups are shown in Table 2. Both SIL and ASCUs rate were almost identical in both the groups with no statistically significant difference (χ^2= 1.17; p =0.280 for SIL and χ^2= 3.69; p=0.055 for ASCUS). The reason for the high incidence of SIL in the asymptomatic women may be due to the fact that the majority of women attending the camps were illiterate and were reluctant to disclose their gynecological problems.

Table 2: The incidence of SIL and ASCUS in the symptomatic and asymptomatic women

Group	No. of cases	SIL incidence	ASCUS incidence
Symptomatic	2015	345(17.1%)	173(8.5%)
Asymptomatic	934	153(16.3%)	61(6.5%)

The incidence of SIL in different age groups starting from the adolescent age of 16-20 years to postmenopausal women upto 60 years is shown in Table 3. The SIL incidence, however, did not show rise with increasing age. The SIL rate was 16.3% in adolescent girls and showed rise to 17.7% in young women between 21-30 years and 17.5% in women between 31-40 years but declined to 14.7% in women beyond 40 years of the age. However, the difference in the SIL age in different age group was found to be statistically insignificant (χ^2= 3.24, p=0.356). A high SIL rate in the young age group between 16-30 years and in women between 31-40 years which form the major component of the screened women (66.3%) as against 23.6% in women above the age of 40 years may be due to the fact that the gynecological symptoms were present in majority of them.

The SIL incidence in different parity groups among 2949 women is shown in Table 4. The SIL rate showed progressive rise with increasing parity from 14.8% in the nulliparous women to 17.5% in multiparous women with 3 or more children. However, the difference in the SIL incidence in different parity groups was found to be statistically insignificant (χ^2= 2.42, p=0.490). Hence the

Table 3: Relation of SIL incidence with age

Age group	No. of women	SIL incidence
16-20 yrs	117	18(15.3%)
21-30 yrs	1163	206(17.7%)
31-40 yrs	973	171(17.5%)
Above 40 yrs	696	103(14.7%)

study though revealed some relationship between SIL rate and increasing parity but this was lacking with age.

Table 4: Relation of SIL incidence with parity

Parity group	No. of cases	SIL incidence
Nulliparous	182	27(14.8%)
Parity 1	259	43(16.6%)
Parity 2	480	72(15.0%)
Parity 3 and above	2028	356(17.5%)

The SIL incidence in 2949 women showing different gynecological symptoms have been analyzed and is shown in Table 5. The SIL rate was found higher with vaginal discharge (18.0%) followed by pain in lower abdomen (16.8%) and menstrual disorders (14.2%). However, difference in the SIL rate with these three gynecological symptoms was found to be stastically insignificant (χ^2= 0.451; p = 0.502). Only 5 cases of contact bleeding were found in the series and SIL was diagnosed in one of them (20%). Similarly only 8 cases of postmenopausal bleeding were seen with SIL diagnosed in 1. However, the overall SIL incidence with different symptoms was found to be statistically insignificant (χ^2= 2.67; p= 0.615).

Table 5: Relation of SIL incidence with different gynecological symptoms

Gynecological symptom	No. of cases	SIL incidence
Vaginal discharge	1132	204(18.0%)
Pain in lower abdomen	755	127(16.8%)
Menstrual disorders and bleeding	322	46(14.2%)
Contact bleeding	5	1(20%)
Postmenopausal bleeding	8	1(12.5%)

Different STDs found in the series were also analyzed for their association with gynecological symptoms (Table 6). Among the non-viral STDs, Candida albicans was seen highly associated with vaginal discharge followed by trichomonal infection. The incidence of these two STDs were low with pain in lower abdomen and menstrual disorders. The difference between the incidence of Candida and Trichomonas with different symptoms was found to be stastically significant (χ^2= 5.31 ; p < 0.001 for Candida and χ^2 = 22 ; p< 0.001 for Trichomonas). Other bleeding disorders like contact bleeding had HSV infection in 1 of the 5 cases and HPV in 2 of the 8 postmenopausal bleeding cases. Similarly, the incidence of HPV and HSV infection with different symptoms was found to be statistically significant (χ^2= 46.9 ; p < 0.001 and χ^2= 31.4; p< 0.001 respectively).

The three gynecological symptoms mostly seen in the rural women namely vaginal discharge, pain in lower abdomen and menstrual disorders were also analyzed in different age groups in 2949 women studied (Table 7). Vaginal discharge was the commonest symptoms observed in the sexually active women between 16-30 years (55.1%). The pain in lower abdomen also showed similar pattern being highest in younger women upto 30 years. The menstrual irregularities were found very common in the young age between 16-30 years (65.2%) and this might be due to the fact that these women were mostly literate and readily disclosed their menstrual problems to the gynecologist in the camp. The incidence of different symptoms in different age groups was found to be statistically significant (χ^2= 99.2; p < 0.001).

The clinical lesions of cervix were also investigated in 2949 women and the SIL incidence with different lesions were also analyzed (Table 8). The erosion cervix was found as the commonest cervical lesion in the rural women (7.6%) followed by the endocervical lesions like cystocoele and nabothian follicles (4.1%). Other cervical lesions like hypertrophied cervix (2.1%), cervix bleeds on touch (0.7%) unhealthy cervix (0.6%) and cervicitis (0.3%) were not so common. The SIL incidence was found higher with cervix bleeds on touch (27.2%) and was between 21%- 23% with other cervical lesions and was lowest (15.5%) with endocervical lesions. However, the difference in the SIL incidence between different clinical lesions of cervix was found to be statistically insignificant (χ^2= 3.26; p = 0.657).

The educational status of 2949 women of the study were also analyzed and the SIL incidence in the two groups- literate and illiterate- were investigated (Table 9). Illiteracy was seen in 60.3% of women while only 39.7% were literate. However, approximately 90% of the literate women had only primary level education and most of them could anyhow write their name in Hindi and hence, their outlook was like that of illiterate women. Only remaining 10% of the literate women had secondary level education and could sign their names fluently even in English and these were mostly young girls below 30 years.

The SIL incidence was found almost identical in both literate and illiterate women and the illiteracy was found to have no bearing on the development of precancerous changes in the cervix. The difference in the SIL incidence between the two groups was found to be statistically insignificant (χ^2= 0.02; p = 0.887). As pointed earlier, 90% of the literate women had only primary level education and were literally like illiterate women. If they are excluded from the literate group, the SIL incidence in the literate women (including those with secondary level of education) would have been much lower. High illiteracy may also be

Table 6: Relation between STDs and gynecological symptoms

Gynecological symptom	No. of cases	Non-viral		Viral	
		C. albicans (143)	T. vaginalis (37)	HPV (16)	HSV (4)
Vaginal discharge	1132	100(8.8%)	31 (2.7%)	12 (1.06)	-
Pain in lower abdomen	755	17 (2.2%)	2 (0.2)	-	-
Menstrual disorders	322	3 (0.9%)	1 (0.3%)	1(0.3%)	1 (0.3%)
Contact bleeding	5	-	-		1 (20%)
Post menopausal Bleeding	8	-	-	2 (25%)	-

Table 7: Distribution of gynecological symptoms according to age

Age group	Vaginal discharge (1132-38.4%)	Pain in Lower abdomen (755-25.6%)	Menstrual disorders (322-10.9%)
16-30 years	624(55.1%)	243(46.1%)	210(65.2%)
31-40 years	388(34.2%)	275(36.4%)	97(30.5%)
Above 40 years	120(10.7%)	130(17.2%)	15(4.6%)

Table 8: Relation of SIL incidence with different clinical lesions of cervix

Clinical lesions	No. of cases	SIL incidence
Erosion cervix	227(7.6%)	47(20.7%)
Unhealthy cervix	18(0.6%)	5(27.7%)
Hypertrophied cervix	61(2.1%)	14(22.9%)
Cervix bleeds on touch	22(0.7%)	6(27.2%)
Cervicitis	9(0.3%)	2(22.2%)
Endocervical lesions (Cystocoele, Nabothian follicles)	122(4.1%)	19(15.5%)

Table 9: Educational status of 2949 rural women studied and SIL incidence in literate and illiterate group

Educational status	No. of cases	SIL incidence
Illiterate	1780 (60.3%)	302(16.9%)
Literate	1169(39.7%)	196(16.7%)

the reason for a poor personal genital hygiene prevailing in the majority of rural women which results in persistent vaginal infections being undetected and untreated due to lack of medical amenities. This may be the reason for high percentage of illiterate women showing vaginal discharge and pain in lower abdomen and may be a contributory factor for the development of carcinoma cervix.

4. Discussion

Cytological examination of cervical smears in 2949 rural women screened revealed a very high incidence of SIL (18.6%). The ASCUS rate was however almost half of the SIL incidence (8.2%). A 18.6% of the SIL rate seen in the rural women in the present series was almost double than observed in the urban counter parts of Lucknow by Misra et al.[6] A high SIL incidence in the rural women as explained earlier may be due to illiteracy and lack of knowledge of personal genital hygiene. A high SIL incidence of 17% had also been reported by Srivastava et al.[7] A moderate SIL rate of 10.5% and 11% were observed by Rajput et al.[8] and Ambedkar et al.[9] A lower SIL rate ranging from 6.4% to 8% has been seen by Das Gupta et al.[10] Deodher et al.,[11] Rawat et al.[12] and by Verma et al.[13] in a tertiary Hospital in the rural area of Himanchal Pradesh, India. A low incidence of 8.3% was also reported by Khasnabish et al in a rural screening in Tripura, North East State of India.[14] A low incidence of SIL ranging from 2.6% to 2.9% have been reported by many investigators across rural India.(Agarwal et al.[15] Sharma et al.,[16] Labni et al.[17] and Satyanaryana et al.[18]). A very low incidence of SIL ranging from 0.3% to 0.9% had also been seen by Nene et al.[19] Nikumbh et al.[20] in rural Maharastra and Ganeshan et al. in the coastal area of Tamil Nadu.[21]

The incidence of inflammatory smears in the present series was found to be 32.4%. Bhutia et al. have also found a low incidence of 20.3% of inflammation in the rural

women[22] while Barouti et al. have reported a very high incidence of 77.2% in their screening.[23] The inflammation was found to be non-specific in 85.2% of cases in the present series while in the remaining 14.8%, it was associated with the presence of some microorganism. Desari et al. have also reported non-specific inflammation in 92% of cases while Roeters et al. have seen this in only 66.4% of their cases.[24,25]

The LSIL changes were associated in 18.7% of cases of inflammatory smears (178 cases). Desari et al. have also seen LSIL in 20.9% of inflammatory smears.[24] Bhutia et al. have also observed similar findings.[22]

In the present series, among the non-viral STDs, Candida albicans was seen in large number of cases (4.8%) while Trichomonas vaginalis was found in only 1.2% of cases. A high incidence of Candida albicans has also been reported by Barouti et al.[23] and Burke et al.[26] A low percentage of Trichomas vaginalis have also been reported by Burke et al.,[26] Barouti et al.,[25] Madhivanan et al.[27] However, the reports from the different investigators from the different part of India revealed trichomonal infections more common than Candida (Srivastava et al.,[7] Nikumbh et al.,[20] Arora et al.).[28] The incidence of viral STDs have been very low in the rural women, with HPV seen in only 16 cases (0.5%) and HSV in 4 cases (0.1%).

In the present series, the SIL incidence was found to be almost identical in symptomatic and asymptomatic women. As stated earlier, this might be due to shyness factor prevalent in the rural women who feel reluctant to tell their gynecological problems. In another rural studies, Ambedkar et al.[9] and Bukhari et al. have found 2-fold increase in the precancerous lesions of the cervix in the symptomatic women than in those without symptoms.[29]

The SIL rate was found to be higher in all age groups in the present series especially in the young sexually active women upto 40 years of age. Infact, approximately 70% of women belonged to this age category. Nikhumbh et al.[20] have also observed 81% of women in their rural screening in Maharastra were in the age group of 20-30 years. As the marriages are performed at an early age in rural India and it is very common practice, the girls are exposed to the prolonged sexual exposure in their life. This may be the cause of a high SIL incidence noticed in the adult girls and women between 21-30 years and 31-40 years respectively. (Misra et al.).[30] This point has also been emphasized by Iyre et al.[31] and Caslenda- Illiquez et al.[32] Green et al. have also correlated early age at the first sexual intercourse and subsequent child birth with risk of carcinoma cervix.[33] Dietch et al. have also seen CIN peak in 20-24 years age group but the risk of cervical cancer increases in women above the age of 50 years.[34] Kashyap et al. have also found significant association of the cervical cancer with young age at marriage.[35] Starting sex at an early age has also been pointed out at as a risk for the development of carcinoma cervix by Ryan et al.[36]

As regards parity, the SIL rate showed rise with increasing parity but there was no statistically significant difference in the SIL rate in different parity groups. The reason for high SIL rate with multiparity may be due to the fact that 68.7% of the women in the study were multiparous. Ganeshan et al. have also found advance age as a significant risk factor for the development of precancerous lesions of cervix in the coastal region of Tamil Nadu.[21] The multiparity as a risk factor of carcinoma cervix has also been stressed by Rajput et al.,[8] Das Gupta et al.[10] and Ray Chaudhary et al.[37] Castellsague et al. have found parity inconsistently associated with the low grade lesions of the disease.[38]

The SIL incidence was found higher with all gynecological symptoms but was maximum with vaginal discharge. The vaginal discharge has seen maximum with young age between the age of 16-30 years. Similar findings have also been observed by Srivastava et al.,[7] Nikumbh et al.[20] and Rajput et al.[8]

Clinical lesions of cervix were found not so common in the screened rural women. Probably the cervical lesions were missed in difficult cases by the trained nurses who were taking Pap smears in the initial stages of rural screening. In order to combat this discrepancy, this job was entrusted to senior resident of the Gynecology Department who took Pap smear with the help of Ayre's spatula. The maximum number of cases found were those of erosion cervix (7.6%) followed by endocervical lesions (4.1%). However, the SIL rate was higher with all cervical lesions. Investigators like Nikumbh et al.[20] and Rajput et al.[8] have also reported a high occurrence of cervical lesions in rural women. As the SIL was found high with all cervical lesions in the present screening, the data shows importance of clinical downstaging of carcinoma cervix in the rural women.

Number of illiterate and literate women in the present screening and the SIL incidence in the two groups are shown in Table-9. Illiteracy was seen in 60.3% of the total women in the present series while only 29.7% were literate. High illiteracy may be the reason for the poor genital hygiene prevailing in these women resulting in the vaginal infections. This may be also the reason for high percentage of illiterate women showing vaginal discharge and pain in lower abdomen and may be contributory factor in the development of carcinoma cervix. This point has also been emphasized by Zhang et al.,[39] Thulaseedharan et al.[40] and Ray Chaudhary.[37] However, the SIL incidence was found almost identical in both literate and illiterate women and hence the illiteracy was found to have no bearing on the development of precancerous changes in the cervix. However, as explained earlier, the majority of the literate women had only primary level education (90%) and literally they were like illiterate women in their behavior. If these

women are excluded from the literate category, the SIL rate with literacy would be much lower.

5. Conclusion

All the high risk factors of carcinoma cervix such as young age between 16-30 years, multiparity and vaginal discharge present in the rural women were associated with high SIL rate and this may be due to poor personal genital hygiene associated with illiteracy. Though the SIL rate was higher in the rural women (18.6%) but it was heartening to note that the majority of them were LSIL. Through adequate treatment and follow up of SIL cases, the progression of the SIL to carcinoma cervix can be checked and the incidence of carcinoma cervix in the rural population screened could be minimized. The aim of rural cervical cancer screening could be achieved in this way by offering single lifetime Pap smear screening through organization of camps and detection of large number of SIL cases and their treatment to bring down the incidence of carcinoma cervix in the rural areas.

Other benefits of rural cervical screening have been that it has been able to create awareness among the rural women regarding the risk factors of the disease and importance of early detection of cervical cancer. Further, many cases showing symptoms like persistent vaginal discharge and bleeding complaints have been managed by the gynecologist at the camp level but the severe cases were referred to the Hospital for management. Many primary infertility cases were also found during screening and for proper treatment were referred to the Hospital. Further, to avoid the early marriage which leads to early and prolonged sexual activity resulting in a high SIL incidence in the young age, the elders in the family should be taught to discourage early marriage of their daughters. The early marriage is also responsible for multiparity for which the rural women should be taught to adopt the Family Planning measures provided by the Government at the primary health centers. Khanna et al. have also emphasized that by implementing educational program involving health workers, the rural women should be taught about the importance of education and Family Planning measures.[41]

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None.

7. Conflict of Interest

The authors declare that there is no conflict of interest.

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