

# Epidemiologic Study of Colposcopy in Clinical Centers of Kermanshah, Iran, during 2006 to 2011

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## Abstract

**Background and aim:** Cervical cancer is one of the most important cancers among women. Early diagnosis and timely treatment at the early stages of the cancer are very effective in prognosis of disease and survival of patients. The present study aimed to investigate the epidemiological characteristics of colposcopy in clinical centers of Kermanshah during 2005 to 2011.

**Methods:** In this descriptive study, 480 patients were examined. Required information from patients was collected from the records of patients referring to Motazedi Hospital, Imam Reza Hospital and the special clinic of Kermanshah University of Medical Sciences during 2006 to 2011. Data were analyzed by SPSS-16 software.

**Results:** The mean age of patients was 37.63 years. Among the examined Pap smear tests, 180 were ASCUCs, 47 LSILs, 5 HSILs, 6 AGUSs, 67 showed normal pap smears and 192 had inflammatory lesions. Patients who had ASCUS lesions in their Pap smears were known to have chronic cervicitis (36.2%) and LSIL (12%) in colposcopy. Patients with LSIL in their Pap Smears showed chronic cervicitis (48.9%) and, then, LSIL (25.5%) in their colposcopy. People with HSIL shown in their Pap smear tests mostly suffered from HSIL (60%) in their colposcopies. People with AGUS lesions mostly showed chronic cervicitis (66.7%).

**Conclusion:** According to the results of this study, it can be concluded that performing colposcopy, as a screening method for the early diagnosis of pre-malignant cervical lesions, along with Pap smear, can play a very effective role even in cases where Pap smear is normal, but the appearance of the cervix is abnormal.

**Key words:** Cervical cancer, Colposcopy, Pap smear

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## Introduction

Cervical cancer is one of the most important cancers among women and one of the main causes of cancer deaths among women (1), which is known as the sixth most common cancer in the United States (2). However, this cancer can be prevented and screening programs can reduce the mortality rate (3). In fact, early diagnosis and timely treatment of cancer in its early stages are very effective in prognosis of disease and survival of patients (2).

Risk factors such as race, sexual and reproductive factors, smoking, and the use of contraceptive methods and immune suppression can be listed as the risk factors that affect this cancer (1). Due to the position and response of the female genital apparatus too many factors, such as hormone levels and many infections, and many of the disorders and symptoms associated with the organ, such as benign and malignant neoplasms, may occur (4).

Screening and examination of women for cervical lesions is usually done by performing a Pap smear test (5). Pap smear is probably the most comprehensive and most effective screening test known (6). However, research has recommended that all individuals with a Pap smear sample be subjected to further investigations (2). Therefore, colposcopy is performed in cases of cervical dysplasia in the Pap smear or diagnosis of an unusual lesion in the normal examinations, as well as in cases of resistance to inflammation and lesions treatments (5). Colposcopy is one of the methods used globally for the early diagnosis of cervical neoplasia (7). Therefore, considering the prevalence of colposcopy in Iran and the city of Kermanshah, it is important to carry out research and accomplish relative statistical studies.

Hence, due to the importance of cervical cancer and its prevalence in women and considering prevention of this cancer and the need for further information on its epidemiology in Iran, this study aimed to investigate the epidemiological characteristics of colposcopy in clinics in city of Kermanshah, Iranduring 2006-2011.

## Methodology

In this descriptive study, all women who referred to clinics in Kermanshah (including: Motazadi Hospital, Imam Reza Hospital and special clinic of the university) during the years 2006 to 2011 were considered as samples of the study. Sample size was calculated with 95% confidence, accuracy of 0.04 and the prevalence of 21% (2), equal to 480, who were selected by available sampling method.

The inclusion criteria to the study included ages 15 to 52 years, and no history of genitalia cancers or other organs of cancer. Therefore, people with a history of cancer and in a different age range were excluded.

The data was collected using a survey including 30 options, approved by qualified individuals (gynecologists and statisticians). Age, place of residence, parity, age of first marriage, first pregnancy age, contraceptive method and duration of use, history of cryotherapy, history of smoking or drug abuse, history of genital warts, type of lesion and result of Pap smear test, type of lesion known in colposcopy and leukoplakia were the variables investigated in this study, which were extracted from the information contained in the patient records.

Data were analyzed using SPSS-16 software. For data analysis, numerical indices such as mean and standard deviation and statistical tests were used.

The Kolmogorov-Smirnov test was used to test the data. Chi-square test was used to test the qualitative data and Mann-Whitney test was used in non-normal cases.

## Findings

In this study, 480 samples were investigated; 443 (92.3%) were residents of the city and 37 (7.7%) were living in a village. The mean age of women was 37.63 years and the mean age of marriage was 18.81 years. The average age of their first pregnancy was 20.65 years, mostly aging 18 to 20 years old. 4 women (0.8%) reported a history of smoking, and 29 (6%) had a history of genital warts. 280 people were asked about the history of cryotherapy and 151 (53.9%) reported positive. 449 (93.5%) women had undergone a Pap smear.

There was no significant relationship between the age of patients with acute, semi acute and chronic cervicitis, LSIL, HSIL and abnormal cervical arteries ( $p > 0.05$ ), however a meaningful relationship was found with ectropion and lactobacilli ( $p < 0.05$ ), so that the higher age of the subjects, the less the ectropion and leukoplakia. The age of the first pregnancy and the age of marriage were also significantly associated with acute cervicitis ( $p < 0.05$ ), and no significant relationship was observed with other cases ( $p > 0.05$ ). Accordingly, the highest incidence of acute cervicitis was most common in the age group with the first pregnancy at ages younger than 25 years and the marriage age of 18-23 years old.

There was a significant correlation between parity and type of lesion in colposcopy ( $p < 0.05$ ); in subjects with parity, most samples were suffering from ectopic lesion, and in those without parity, more chronic cervicitis was observed.

There was no significant relationship between smoking, having genital warts, location and duration of use of contraceptive method and type of lesion in colposcopy ( $p > 0.05$ ).

Concerning the relationship between the type of contraceptive and the type of lesion in colposcopy, the results suggested that people who used OCP showed less semi acute cervicitis and more chronic cervicitis

**Table 1 .Frequency distribution and percentage of contraceptive type and its relation with type of lesion in colposcopy**

Contraceptive type	Frequency	Type of lesion in colposcopy							
		Acute cervicitis p.value	Semi-acute cervicitis p.value	Chronic cervicitis p.value	LSIL p.value	HSIL p.value	Ectopic p.value	abnormal vascular p.value	leukoplakia p.value
OCP	160	0.525	0.001	<0.001	0.109	0.604	0.889	1.000	0.529
TL	107	1.000	0.047	0.180	0.077	0.890	0.225	0.339	0.545
IUD	30	0.271	0.124	0.196	0.963	0.604	0.232	0.171	0.254
Condom	47	0.381	0.157	0.984	0.927	0.508	0.254	0.205	0.709
Vasectomy	10	0.533	0.933	0.678	0.977	0.769	0.582	0.235	0.098
Natural	125	0.045	0.582	<0.001	0.005	0.960	0.051	0.218	0.718

( $P < 0.001$ ) and acute cervicitis rates were higher among TL users ( $P = 0.047$ ). Also, in normal people, acute cervicitis and LSIL were higher ( $P < 0.05$ ), and chronic cervicitis was higher among patients who did not take this method ( $P < 0.001$ ). Other correlations were not significant ( $P > 0.05$ ) (Table 1).

According to the results of this study, the highest frequency of lesion in Pap smear was related to inflammation and ASCUS, respectively. Also, the highest frequency of lesion in the biopsy was related to chronic cervicitis and in the colposcopic view of ectropion (Table 2).

**Table 2: Frequency distribution and type of lesion in Pap smear, biopsy and colposcopy**

		Number
Type of lesion in Pap smear	Normal	67
	ASCUS	180
	LSIL	47
	HSIL	5
	AGUS	6
	Inflammation	192
Type of lesion in biopsy	Acute cervicitis	83
	Semi-cervicitis	44
	Chronic cervicitis	163
	LSIL	49
	HSIL	4
Type of lesion in the colposcopy view	Cervical eccentricity	67
	Abnormal Cervical Arteries	58
	Leukoplakia	26

Other results showed that there was a significant correlation between type of lesion in Pap smear and type of lesion in colposcopy ( $p < 0.001$ ). Based on this finding, in patients with normal Pap smear, the type of lesions observed in colposcopy were greater; the ectropion followed by chronic cervicitis. In patients recognized to have ASCUS lesions in their Pap smear, the type of lesions observed in colposcopy were greater; chronic cervicitis (36.2%) and, then, LSIL (12%). The number of ectropy lesions is lower in their colposcopy examination. Ectopic lesions in normal Pap smears were mostly abnormal.

The type of lesions seen in colposcopy was frequently chronic cervicitis (48.9%), and then LSIL (25.5%) among patients with LSIL in their Pap smear. In patients diagnosed with HSIL lesions in their Pap smears HSIL (60%) was greater in their colposcopies. Those diagnosed with AGUS lesions in their pap smears, chronic cervicitis (66.7%), was more frequent in their colposcopies. Also, the number of ectropion in severe inflammatory lesions was more than mild and moderate inflammatory lesions.

## Discussion

In this study, the aim of the present study was to investigate the epidemiological characteristics of colposcopy in clinical centers of Kermanshah in 2005 to 2011. A total of 480 women who participated in colposcopy in Kermanshah clinics were evaluated.

In this study, no significant relationship was found between age of first pregnancy and parity and type of lesion in colposcopy, which confirmed the results from Castle and colleagues (2005) (8). But contrary to the results of our study, Louie et al. (2009) reported that lower ages of first intercourse and pregnancy among women increased the risk of cancer (9).

In our study, 92% of the subjects were residents of the city and 8% were villagers. The results of the study indicated that there was no relationship between location and type of lesion in colposcopy. However, Hagighi et al. (2008) suggested the prevalence of malignant neoplasms and pre-neoplastic lesions were twice and triple among rural women, where 21% of the women were rural residents and 79% were urban residents, (10). One of the possible reasons for the discrepancy between the results of these two studies might be the low number of villagers in the present study.

Although it was reported that smoking women with cervical epithelium had fewer Langerhans cells than non-smokers, and the local immunity of cells in these women decreased and, therefore, they were more susceptible to viral lesions that can be the cause of cancer, in the present study, there was no correlation found between cigarette smoking and type of lesion in colposcopy, which was not consistent with the results of Bahiraeian et al. (2001) (11). One reason for the difference in results could be the small number of smokers in our study (%0.8), while the number of smokers was 20% in Bahrain et al's (2001) study (11). Also, Cuzick et al. (1996) showed no relationship between cigarette smoking and cervical cancer (12), which confirms the results from the present study.

Considering the results from this study, 43% of women were recognized with inflammation in their Pap smears, of which 8.9% showed LSIL biopsy. Based on similar results in a study in India, Bhutia et al. (2011) also found that 24.3% (102 patients) of all subjects had inflammation and 8.6% (36 patients) had persistent inflammation in Pap smear, of whom 30 had colposcopy, 16 showed abnormal colposcopy, and 5 had CIN in their biopsy (13). According to the results of these two studies, due to the low sensitivity of Pap smear the pro-malignant lesions of the cervix might not be diagnosed in women with inflammatory Pap smear. Nevertheless, scientifically it is not suggested to perform colposcopy in all women with Pap smear inflammation. Therefore, it is recommended that women with inflammatory Pap smear undergo a standard treatment period and repeat their Pap smear again, and if the inflammation persists, colposcopy should be performed.

In the present study, the incidence of LSIL and HSIL in women with ASCUS was 12.3% and 9%, respectively. In the study of Panyanupap et al. (2011) on patients with ASCUS, the prevalence of CIL and CIN was 8.6% and 3.2%, respectively (14). According to these results, colposcopy is recommended for women with ASCUS.

The present study had some limitations including lack of proper record of patients and lack of follow up systems for patients; therefore, it is suggested that future population based studies should be undertaken to determine the exact state of the disease.

According to the results of this study, it could be concluded that performing colposcopy, as a screening method for the early diagnosis of premalignant cervical lesions, along with Pap smear can be very helpful and effective even if Pap smear is normal, but the appearance of the cervix is abnormal.

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## References

1. Danforth Women and Midwifery, 2008, (editors: James Scott and others), translation to Behnam Bouzari ... and others, under the supervision of Mehrnaz Valadan, Tehran, Book of Arjomand, 2009: 1235-1236.
2. Dasari P, Rajathi S, Kumar SV. Colposcopic evaluation of cervix with persistent inflammatory pap smear: A perspective analytical study. *Cyto J.* 2010; 7: 16.
3. Shahrads B, Mortazavi M, Aminian SH. Survey 1698 female genital malignancies in Jorjani hospital 1972-98. *Pejouhandeh Quarterly Res J.* 2002; 28 (7): 115-17.
4. Scott JR, GibsRs, Karlan BY, Haney AF. *Danforth's obstetrics and gynecology.* USA: Williams & Wilkins; 2007.
5. Khadivi R, GanjiF, Taheri SH, Sadegi M, Shahrani M. The evaluation of Papanicolaou (Pap) smear processing in the health centers of Shahrekord in 2005. *Journal of Shahrekord University of Medical Sciences, Volume 9, Issue 1, Spring 2007:* 16-22.
6. F Fakor, S.M AghaeeNejad, S.M Moosavi. Pathologic Findings of Endocervical Curettage in Routine Colposcopy in Abnormal Pap Smear. *Journal of Guilan University of Medical Sciences.* 22 (87): 1-6.
7. Hegde D, Shetty H, Shetty PK, Rai S. Diagnostic value of acetic acid comparing with conventional pap smesr in the detection of colposcopic biopsy – proved CIN. *J Cancer Res Ther* 2011, 7(4): 454-8.

8. Castle PE, Walker JL, Schiffman M, Wheeler CM. Hormonal contraceptive use, pregnancy and parity, and the risk of cervical intraepithelial neoplasia 3 among oncogenic HPV DNA- positive women with equivocal or mildly abnormal cytology. *International journal of cancer*. 2005 Dec 20;117(6):1007-12.
9. Louie KS, De Sanjose S, Diaz M, Castellsague X, Herrero R, Meijer CJ, Shah K, Franceschi S, Munoz N, Bosch FX. Early age at first sexual intercourse and early pregnancy are risk factors for cervical cancer in developing countries. *British journal of cancer*. 2009 Apr 7;100(7):1191-7.
10. F. Haghghi , S.A. Saadatjoo , F. Fanoodi , M. Taherian. The epidemiologic study of the neoplasms in the internal genital system of women referring to pathologic centers in Birjand (1996-2006). *Journal of Birjand University of Medical Sciences*, 15(4), Winter 2009: 75-84.
11. Boheyraee A., Nabaee B. Risk factors for the onset of Cervical Invasive Cancer. *Journal of Tehran Medical School*, 2001, 59 (2): 94-100.
12. Cuzick J, Sasieni P, Singer A. Risk factors for invasive cervix cancer in young women. *European Journal of Cancer*. 1996 May 1;32(5):836-41.
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 Apr 1;48(2):220-222.
14. Panyanupap A, Thaweekul Y, Poomtavorn Y, Mairaing K, Suwannarurk K, Pattaraarchachai J, Bhamarapratana K. Prevalence of high-grade cervical intraepithelial neoplasia (CIN) in the patients with atypical squamous cells of undetermined significance (ASC-US) pap smears: hospital based, dynamic population area. *Journal of the Medical Association of Thailand*. 2011 Feb 9;94(2):159-63.