Prevalence of abnormal cervical smears among females in Kirkuk governorate

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Abstract

Background: Cervical cancer is the second most common cancer in women. Invasive cervical malignancy is preceded by premalignant cervical epithelial lesions of different grades which are termed as cervical intraepithelial neoplasia . Cancer of the cervix can be prevented by intercepting it at the preinvasive stage.

Objective: This study aimed to estimate the prevalence of abnormal cervical smears in Azadi Teaching Hospital in Kirkuk governorate.

Subject & method : A prospective study was carried out from March 2007 to March 2011 in Azadi Teaching Hospital in Kirkuk governorate . The abnormal Pap smears were assessed according to the Bethesda system.

Results: A total of 1175 Pap smears were collected from patients aging 19 to 74 years old. 552 (46.94%) smears were 'negative', 30(2.55%) smears were labeled as' inadequate', and 578 (49.25%) had 'Benign cellular changes' and there were 15(1.28%) abnormal Pap smears consisting of 10 (67%) squamous intraepithelial lesion with undetermined significance , 2(13.3%) Low grade squamous intraepithelial lesion , 1(6.7%) high grade squamous intraepithelial lesion , 1(6.7%) carcinoma and 1(6.7%) atypical glandular cells of undetermined significance .

Overall incidence of the cervical cancer among these samples was 0.08% (1 out of 1175).

Introduction

Cervical cancer is the primary cause of cancer deaths among women in many developing countries (Ferlay *et al.* , 2004). According to the recent data, approximately 85% of the new cases of cervical cancer (estimated of 493,000 cases worldwide) and deaths from cervical cancer that occur each year affect women in developing countries (Lawson *et al.* , 2003) .Yet, unlike most other cancers, cervical cancer is readily preventable when effective programs are conducted to detect and treat its precursor lesions.

Pap smear is a relatively simple cost-effective screening test that is carried out in conjunction with gynecologic examination at the primary health care level to detect abnormalities that might lead to cervical cancer (Richart, R.

1990). Pap test is at present the most essential element in prevention of developing cervical cancer (Elovainio *et al*.,1997) . Since introduction of the Pap smear, a dramatic reduction has been observed in the incidence and mortality of invasive cervical cancer worldwide. This is attributable to the ability of the Pap smear to identify precancerous changes and the availability of effective treatments (Lawson *et al*. , 2003). Cervical cytology screening helped to reduce cervical cancer rate dramatically since its implementation from 1950s (Anderson et al. ,1995 ,McCrory DC 1999). The major risk factors for cervical cancer are well documented and include sexual habits (age of first sexual intercourse and number of sexual partners), infection with Human Papilloma Virus (HPV) and cigarette smoking (Rojsangruang *et al*. , 2006 , Willams *et al*. ,1997). The pathogenesis of cervical cancer and precancerous lesions in Muslim countries might be different compared with western societies due to the difference in the risk factors.

The aim of this study was to estimate the prevalence of abnormal cervical cytology based on the Bethesda System among females in Kirkuk, Iraq.

Patients and Methods.

This prospective study conducted at Azadi Teaching Hospital in Kirkuk for the period from March 2007 to March 2011 by using the Bethesda system (Greenlee *et al*. , 2000).All cytological smears were collected by the Ayre spatula and slides were evaluated at the cytology lab of Azadi Teaching Hospital in Kirkuk governorate. Cytological diagnoses done according to the Bethesda system(Greenlee *et al*.,2000).

Results

The present study included 1175 female patients. The mean age of them was 45 years, ranging from (19-74) years.

The cervical smears were classified according to the Bethesda system: 552 (46.94%) were negative, 578 (49.23%) were benign cellular changes and 15(1.28%) were abnormal (squamous intraepithelial lesion) (SIL), 30 (2.55%) were inadequate (Table 1)

Table (1) Classification of the results of Pap smear

Pap Smears	Number	%
Negative	552	46.94
Benign cellular changes	578	49.25
Squamous intraepithelial lesion including carcinoma	15	1.28
Inadequate	30	2.55
Total	1175	100

The Abnormal smears (SIL) can be separated into ASCUS (67%) (10 out of 15 smears) , LSIL (13.3%) (2 out of 15 smears), HSIL (6.7%) (1 out of 15 smears), carcinoma (6.7%) (1out of 15 smears) and AGUS (6.7%) (1 out of 15 smears).Incidence of the cervical cancer among these samples was (0.08%) (1out of 1175) (Table 2).

Table (2) Distribution of the results of abnormal pap smears

Abnormal Pap Smear Result	Number	(%)	Age Mean (Range)	
ASCUS	10	(67)	46	(36-74)
AGUS	1	(6.7)	53	
LSIL	2	(13.3)	48	(31-58)
HSIL	1	(6.7)	70	
SCC	1	(6.7)	71	
Total	15	(100)	47	(31-74)

Discussion

The incidence of neoplastic changes in our study (1.28 %) which was lower as compared with other studies performed in industrialized countries (Greenlee et al., 2000, Johnnesson et al., 1978, Hakama M, 1999).This contrasts, for example, with a study in the USA which found that (11.8 %) of women aged 20–29 years and (8.4%) of those over 30 years had infectious processes and (3.5 %) and (1.3 %) respectively showed squamous intraepithelial lesions (SIL) (Mount et al., 1999).

Muslim culture of our population suggests decreased incidence of SIL in youngest age group (under 31 years) compared to the Sadeghi`s study (1984).

The prevelance of cervical neoplasia in our study was lower than that of developed countries and this difference is complex and hypothetic but it may be related to sexual behavior in developed countries.

The mean age of SIL positive in our study (47 years) was higher than in the western countries, while a study in Saudi Arabia showed that the average age of SIL was lower than in our study (Abdullah et al. , 2007 , Wright et al. , 2002).

The majority of the SIL diagnoses in our population were the ASCUS category, representing   67 % of SIL cases. Although patients with ASCUS diagnosis are at increased risk for the development of SIL (Wright et al., 2002) significance of this diagnosis remains, as its name suggests,   "Undetermined." Furthermore, ASCUS diagnosis represents the area of most intra observer variability among cytopathologists.

Low grade SILs are at substantially increased relative risk of developing high grade SIL and invasive cervical carcinoma compared to the SIL-negative population (Soutter et al., 1994,).

Although most low grade SIL lesions regress completely, the absolute risk of patients with low grade SIL for developing high grade SIL within 2 to 4 years is (15% - 25%) (Mount et al., 1999, Wright et al. , 2002). Furthermore, HSIL may arise in a HPV infected patient without an intervening diagnosis of LSIL. The largest study of this nature in the United States was reported by Sadeghi and associates (Sadeghi et al. ,1984) who found a (1.9%) SIL rate in 194069 sexually active adolescent age group (15 - 19 years).

although in our study, it was found that in situ and also invasive carcinoma occur in 70s there are studies showing that it can occur even after 70s and the relatively high incidence of invasive cancer in older women in these studies made them to recommend continue screening at older ages , despite some reports of decreased positive predictive value because of rapid drop of in situ cancer after a peak at about age 35 (Gustafsson et al., 1995).

The Bethesda System category of AGUS includes cells of adenocarcinom in situ as well as cells suspicious for adenocarcinoma of the cervix, which now accounts for (8% - 26%) of primary cervical cancers (Sadeghi et al. , 1984). In our study (6.7 %) of abnormal cervical smears reported AGUS which was similar to the result of study, in Saudi Arabia (Altaf 2001).

Our study demonstrates that cervical smear results from 20- to 29-years old patients have the highest percentage of infectious processes of all decade groupings. Based on this and other studies (Lawson et al., 2003, McCrory DC 1999, Mount et al. , 1999, Abdullah et al. , 2007),

The results of our study are in agreement with others (Altaf F.2001), that we do have relatively lower prevalence of cervical carcinoma and cervical lesions, which is most likely related to the sexual behaviors under the Islamic rules. In Iraq, according to Islamic rules, sexual activity typically starts only after marriage, and the cultural and religious traditions of our conservative society restrict the likelihood of multiple sexual partners. However other practices such as male circumcision, which is well established in our country, may play an important role as well (Altaf F.2001). For better estimates of the prevalence of cervical disease larger population-based surveys should be conducted. We also speculate that there may be a different level of interaction between the risk factors determining development of the cervical low and high grade lesions in this region of the world. The low prevalence rate of SIL among Iraqi females with the wide range of age distribution in comparison with other populations should call for further nationwide study of the characteristics of this low risk community.

A good centrally organized cytological cervicovaginal screening program, implemented by the public sector, is recommended. Visual inspection aided by application of acetic acid is an alternative to cytology screening, yet new techniques such as HPV DNA testing can be used to identify cervical lesions without reliance on cytology (Kuhn et al., 2000). We strongly recommend that sexually active women should undergo routine cervical smear screening because sexually active women are more prone to infection than others.

Conclusion: this is the prevelance about pap smear pattern in Kirkuk and the number of abnormal pap smears in this study was less than western countries, but was comparable with Middle East and Islamic regions. More prospective studies are recommended.

Keywords: Prevalence of abnormal Pap smear, Bethesda System, Kirkuk, Iraq

Acknowledgment

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نسبة حدوث مسحات عنق الرحم الغير طبيعية في الاناث في محافظة كركوك

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الخلاصة

تم اجراء دراسة مستقبلية لتقيم نسبة حدوث التغيرات الغير طبيعية لمسحات عنق الرحم في مستشــفى ازادي التعليمي في كركوك للفترة من اذار ٢٠٠٧ الى اذار ٢٠١١ حيث تم تصنيف المسحات الغير طبيعية بناء علــى نظــام بشدا وجمعت ١١٧٥ مسحة لعنق الرحم مــن انــاث تتــراوح اعمــارهن بــين (١٩-٧٤) ســنة وقــد لــوحظ ان ٥٥٢(٤٦,٩٤%) مسحة كانت سلبية ،٣٠(٢,٥٥%) مسحة كانت غير وافية ،٥٧٨(٤٩,٩٤%) مسحة اظهرت تغيرات خلوية حميدة وكانت ١٥(١,٢٨%) مسحة غير طبيعية ومن هذا العدد النسبة كانت كـــالاتي:١٠(٦٧%) تمثــل الافــة الحرشفية الظهارية الداخلية الغير محددة الاهمية،٢(١٣,٣%) تمثل المرحلة الدنيا للافــات الحرشــفية الظهاريــة ،١ (٦,٧%) تمثل المرحلة العليا للافات الحرشفية الظهارية ، ١(٦,٧%) تمثل سرطان عنق الرحم و١(٦,٧%) تمثل خلاية غدية غير سوية غير محددة الاهمية وكانت نسبة الحدوث الكلي لسرطان عنق الرحم من بين هذه النماذج (٠,٠٨%)