RESEARCH ARTICLE

Prevalence of cervical dysplastic lesions in cervical smears from Baghdad city: a single centre study

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Abstract

Objective: To assess the association of demographic and clinical features of patients with clinicopathological markers in cases of abnormal Pap smear.

Method: The retrospective study was conducted from July 2020 to June 2021 at Al-Elwiya Maternity Teaching Hospital, Baghdad, Iraq, and comprised data from January 2019 to June 2020 of women who underwent Pap-smear. Data was retrieved for patients' age, marital status, smoking status, clinical symptoms at presentation, findings of clinical and cytological examinations, as well as follow-up or human papillomavirus testing data where applicable. Data was analysed using SPSS 26.

Results: Of the 560 women with mean age 40.42±10.211 years, 26(4.6%) were attending the hospital for routine check-ups/screening, and 12(2.1%) for follow-up screening with previous abnormal Pap-tests, while the rest had been referred for medical consultation. The most common diagnosis was negative for intraepithelial lesion or malignancy 403(72%) Cervical epithelial abnormalities were seen in 136(24.3%) cases, and, of them, 12(8.8%) returned for follow-up. Epithelial abnormalities had a significant association with age, clinical presentation, and clinical examination results ($p<0.05$), while it had a non-significant relation with marital and smoking statuses ($p>0.05$).

Conclusion: The majority of subjects were referred cases, with routine cervical screening being <5%. Increasing public awareness about the importance of cervical screening and follow-up is essential.

Key Words: Papanicolaou, Uterine Cervical, Papillomavirus Viruses, Demography, Smoking(JPMA 74: S223 (Supple-8); 2024) **DOI: https://doi.org/10.47391/JPMA-BAGH-16-50**

Introduction

Uterine cervix carcinoma is a major health problem and ranked 4th among all cancers in women worldwide, and 15th among Iraqi women, with only 286 registered cases of invasive cervical carcinoma and a 2.2% age-standardised rate per 100,000 population, according to data of 2020[1]. The relationship between cervical carcinoma and human papilloma virus (HPV) is well established in literature, with most cases being attributed to high-risk genotypes of this virus, especially HPV16 and HPV18[2]. In western Asia, an estimated 2.3% of women are afflicted with a high-risk HPV infection at some point in their lifetime, and most of the cases of cervical carcinoma have been found related to HPV16 and HPV18 genotypes [3]. Most cervical carcinoma can be prevented through regular screening programmes and by HPV vaccination[4]

Screening women for the sake of early detection of cervical pre-cancerous lesions is the most successful screening test for cancer in history. This screening is accomplished through the cervical smear, or Pap-smear, for cytological analysis, and is done by scraping a sample of uterine cervix cells, mainly the transformation zone, using a spatula or brush[5].

In the developed countries, the ready availability of both screening and vaccination greatly reduced the incidence of cervical cancer, but the situation in low- or middle-income countries (LMICs) is still worrisome[4]. Iraq is regarded as an upper-middle-income country[6], but the cervical screening programme in Iraq is not obligatory, and screening is done under special circumstances and through gynaecologists' referral. Consequently, the actual magnitude of cervical dysplastic changes is not known and the same is true of the HPV burden.

The current study was planned to assess the association of demographic and clinical features of patients with clinicopathological markers in cases of abnormal Pap smear.

Materials and Methods

The retrospective study was conducted from July 2020 to June 2021 at Al-Elwiya Maternity Teaching Hospital, Baghdad, Iraq, and comprised data from January 2019 to June 2020 of women who underwent Pap-smear. Cases

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with pertinent information missing were excluded. Data was retrieved after approval from the ethics review committee of the Iraqi Centre for Cancer and Medical Genetics Research, Mustansiriyah University, Baghdad, Iraq.

Data retrieved related to patients' age, marital status, smoking status, clinical symptoms at presentation, clinical examination results, including colposcopic examination if done, and cytological smear results. Data on follow-up visit or HPV virus testing, where applicable, was also retrieved. All virus tests were conducted either at the Central Health Laboratory of the Ministry of Health or at private laboratories.

All cytology studies had been done using conventional Pap-smear techniques. Cytology results were classified according to the Bethesda system[7] Negative for intraepithelial lesion or malignancy (NILM) category had subcategories, like atrophy or infection, atypical squamous cells of undetermined significance (ASC-US), low-grade squamous intraepithelial lesion (LSIL), high-grade squamous intraepithelial lesion (HSIL), squamous cell carcinoma (SCC), atypical glandular cell of undetermined significance (AGC-US) and adenocarcinoma (ADC). Any further available information was studied and correlated, including the results of follow-up visits, repeat cervical smearing, HPV testing, and biopsy results, if available as part of the initial workout for diagnosis.

Data was stored in an Excel 2016 worksheet and analysed using SPSS 26. Chi-square test was used for studying associations between diagnostic categories and various clinical parameters. P≤0.05 was considered statistically significant.

Results

Of the 600 cases retrieved, 40(6.7%) were excluded. The final sample, as such, stood at 560(93.3%). The mean age was 40.42±10.211 years (range: 20-75 years). The largest age group was 40-49 years with 195(34.8%) cases, followed by the 30-39 years 173(30.9%). There were 87(15.5%) women in their 20s and 83(14.8%) in their 50s, while 22(3.9%) were aged 60 years or above.

Regarding marital status, 505(90.2%) were married, including 5(0.9%) who reported having married more than once. There were 41(7.3%) widows, 9(1.6%) divorced, and 5(0.9%) who reported separation from their husbands.

There were 315(56.3%) non-smokers and 209(37.3%) passive smokers, while 36(6.4%) reported being active smokers using cigarettes or other forms of smoking, like shisha.

Table-1: Clinical presentation.

Clinical presentation	Frequency	Percent	Cumulative Percent
Vaginal infection/discharge	174	31.1	31.1
Post-coital bleeding	113	20.2	51.2
Bleeding	24	4.3	55.5
Post-menopausal bleeding	34	6.1	61.6
Follow-up smear for known HPV infection	12	2.1	63.7
Pelvic pain/lower abdominal pain	28	5.0	68.8
Warts	18	3.2	72.0
Routine check-up/screening	26	4.6	76.6
others/mass lesions/with D&C	14	2.5	79.1
Irregular cycle	42	7.5	86.6
Known case of cervical carcinoma	1	.2	86.8
Pain and discharge	74	13.2	100.0
Total	560	100.0	

HPV: Human papillomavirus, D&C: Dilation and curettage.

There were 26(4.6%) women attending the hospital for routine check-ups/screening, 12(2.1%) for follow-up screening with previous abnormal Pap-tests, while the rest had been referred for medical consultation. The presenting gynaecological manifestations included vaginal discharge or evidence of infection 174(31.1%), post-coital bleeding 113(20.2%), discharge combined with pain 74(13.2%), warts 18(3.2%) and others (Table 1).

On clinical examination, the most common finding was that of white discharge with bleeding on touch 223(39.8%), followed by discharge alone 69(12.3%), while in 50(8.9%) cases the findings were unremarkable (Table 2). The most common diagnosis was NILM 403(72%).

Table-2: Clinical examination.

Examination findings	Frequency	Percent	Cumulative Percent
Unremarkable	50	8.9	8.9
White discharge and bleeding on touch	223	39.8	48.8
Erosion	34	6.1	54.8
Combined with wart	4	.7	55.5
Mass	26	4.6	60.2
Discharge	69	12.3	72.5
Bleeding on touch	11	2.0	74.5
Atrophic cervix	20	3.6	78.0
Unhealthy	12	2.1	80.2
Combined	16	2.9	83.0
Erosion and discharge	41	7.3	90.4
Erosion and bleeding to touch	49	8.8	99.1
Others	5	.9	100.0
Total	560	100.0	

Table-3: Pap-smear diagnoses.

Diagnosis	No. of cases	Percent	Cumulative Percent
NILM	403	72.0	72.0
ASC-US	50	8.9	80.9
LSIL	65	11.6	92.5
HSIL	13	2.3	94.8
NILM with atrophy	13	2.3	97.1
NILM and candida	6	1.1	98.2
AGC-US	3	0.5	98.8
ASCUS with Candida	2	0.4	99.1
Cervical squamous cell carcinoma	2	0.4	99.5
Unsatisfactory	2	0.4	99.8
ASC-H	1	0.2	100.0
Total	560	100.0	

NILM: Negative for intraepithelial lesion or malignancy, ASC-US: Atypical squamous cells of undetermined significance, LSIL: Low-grade squamous intraepithelial lesion, HSIL: High-grade squamous intraepithelial lesion, AGC-US: Atypical glandular cells of undetermined significance, ASC-H: Atypical squamous cells cannot exclude HSIL.

NILM with atrophic changes were seen in 13(2.3%) cases, and NILM with candida in 6(1.1%). There were 65(11.6%) cases of LSIL, 50(9.3%) ASC-US, 13(2.3%) HSIL and 2(0.4%) SCC (Table 3).

Cervical epithelial abnormalities were seen in 136(24.3%) cases, and 12(8.8%) of them returned for follow-up after 6-24 months. Among the 136(24.3%) such cases, 8(5.8%) had HPV, and 5(62.5%) of them were negative and 3(37.5%) were positive for HPV16 and HPV18.

The relationship between age groups and the diagnosis was significant (p<0.001), with most LSIL cases 24(36.9%) seen in the 40-49 years group, and 23(35.4%) in the 30-39 years group. The highest number of HSIL cases 4(30.8%) were seen in the 30-39 age group, followed by 2(15.4%) in the 50-59 years group.

Marital status (p=0.799) and smoking status (p=0.655) had no significant relationship with diagnosis.

The relation of clinical presentation (p=0.038) and clinical examination (p<0.001) with diagnosis was statistically significant.

With respect to dysplastic changes among the 26(4.6%) women attending the clinic for routine screening, 4(15.3%) of the women attending the screening were diagnosed with LSIL and 2(7.6%) with ASC-US, while no HSIL and SCC cases were seen. Among the 534(95%) women attending for medical consultation, 61(11.4%) were found to have LSIL.

Discussion

The incidence of cervical cancer is 9.9 per 100,000 in the developed countries compared to the less-developed countries 15.7 per 100. 000[8]. This is largely because of regular cervical screening and the availability of HPV vaccination. In Iraq, the incidence of cervical carcinoma is low with an age-standardised rate of 2.2 which is comparable to that of some of the neighbouring countries, like Jordan 2.9, Kuwait and Saudi Arabia 2.8, and Turkey 4.8.[1]

While the number of invasive cervical SCC cases is being documented by the local cancer registry[9] the actual magnitude of cervical precancerous lesions is not known, and the same is the case with the HPV prevalence in the population, especially high-risk HPV. This challenge is due to the lack of regular screening programmes, and possibly low awareness about it in Iraq. Most women who underwent Pap-smears in the current study had been referred with gynaecological manifestations, and in many cases, HPV testing results were not available.

A minority of women 26(4.6%) attended the Pap-smear testing as part of routine check-up/screening in the current study, compared to 5,529(42.2%) reported from Jordan[8]. More worrisome element in the current study was the was the percentage of abnormal Pap-smears with epithelial cell abnormalities, which was relatively high 6(22.9%), while it was seen in 210(3.8%) cases in a Jordanian study[8]. This might be attributed to the limited number of women coming for routine check-up, or due to over-diagnosis.

Pap-smears with epithelial abnormalities were seen in 136(24.3%) current cases, which is higher than reports from regional countries, like Saudi Arabia 4.3%[10], Kuwait 4.4%[11] and the United Arab Emirates 3.5%[12].

ASC-US cases were second to LSIL cases, but were still unacceptably high as guidelines mention any prevalence >5% as over-diagnosis[13]. In a study done in Baghdad, the prevalence of ASC-US was 10[14], while LSIL was 11.6%, followed by HSIL, atypical squamous cells without excluding HSIL (ASC-H), AGC-US and SCC. In comparison with other regional countries, all these abnormalities appeared in much lower frequencies[15].

A positive statistical relationship was found between age groups and the diagnostic categories (p<0.001) in the current study. A similar positive association was seen in earlier studies[15].

Limitation: The current study has its limitations, including a relatively small sample size and the data being from a single hospital. No liquid-based cytology techniques were available for comparison with conventional techniques, and even HPV molecular testing

was done outside the study site.

Conclusion

The majority of subjects were referred cases, with routine cervical screening being <5%. Increasing public awareness about the importance of cervical screening and follow-up is essential.

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