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RESEARCH ARTICLE

AGE, PARITY AND STAGE OF CERVICAL CANCER AMONG CERVICAL CANCER PATIENTS ATTENDING ONCOLOGY DEPARTMENT; AN OBSERVATIONAL CROSS SECTIONAL STUDY AT JINNAH POSTGRADUATE MEDICAL CENTER, KARACHI

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Abstract

Background: Identification of disease patterns in context of basic social demographic characteristics among cervical cancer patients in the local population or Pakistani women is of high importance to identify the women at high risk of disease.

Objective: To determine the age, parity and stage of cervical cancer among cervical cancer patients attending oncology department at Jinnah Postgraduate Medical Center, Karachi.

Methods: This prospective cross-sectional study was conducted in the Oncology Department of Jinnah Postgraduate Medical Center, Karachi during October 2023 to January 2024. In total 92 women of age 18 years or above, presenting with biopsy proven cervical cancer were recruited using random convenient sampling technique. Data was analyzed using SPSS version 24.

Results: The mean age of study participants was 53.4 years + SD10.9 years. The highest proportion of cases were recorded between 47-57 years of age with a proportion of 37.0% (n=34). 62% (n=57) of all study participants had a history of multiparty with at least five or more children. 65% (n=60) of all the study participants were postmenopausal women. 59.8% (n=55) of all the study participants were found to have Stage-II and Stage-III disease at the time of diagnosis while Squamous Cell Carcinoma was the most frequent histopathological diagnosis type.

Conclusion: The highest burden of cervical cancer is present among the women of age group 47 to 57 years. Cervical cancer was most prevalent among women with higher parity or having five or more children. Squamous cell carcinoma was the most frequent diagnosis while most patients were diagnosed at the stage-II of the disease.

Introduction:-

Cervical cancer is globally recognized as one of the common cancers among women. The burden of cervical cancer burden related mortality is relatively much higher in Asian countries due to lack of public awareness regarding Human Papilloma Virus (HPV) infection and screening as well as unavailability of vaccine to general public in most Asian countries.(2)

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Pakistan is an Asian country where cervical cancer burden is still on rise.(3) Studies conducted at tertiary care hospitals in Sindh and Punjab have identified cervical cancer as the second most common gynecological malignant disorder among females in Pakistan. (4-6) However, the knowledge about prevention of cervical cancer and related practices is still unsatisfactory. A recent study, conducted in Karachi has reported low frequency for cervical cancer screening and poor knowledge including awareness regarding vaccination against Human Papilloma Virus (HPV). (7) A small scale study previously conducted in 2009 at the Nuclear Institute of Medicine and Radiotherapy (NIMRA) found that cervical cancer was relatively more common among women of age 40 years and above and women having five to seven children. The study also found that almost 80% of the cervical cases were presented with advanced disease in the stage-II, III and IV. (8)

Moreover, despite being recognized as a common gynecological cancer still there is dearth of local data regarding distribution of cervical cancer according to women's age, parity and severity of disease. Identification of disease patterns in context of basic social demographic characteristics among cervical cancer patients in the local population will help in identification of women at high risk of disease in our community. Hence, this study aims to determine the age, parity and stage of cervical cancer among cervical cancer patients attending oncology department at Jinnah Postgraduate Medical Center, Karachi. Findings from this study may help in improving cervical cancer screening and related prevention efforts in Karachi and other settings in Pakistan.

Methods:-

A prospective cross-sectional study was conducted in the Oncology Department of Jinnah Postgraduate Medical Center, Karachi during October 2023 to January 2024. The JPMC is one of the biggest tertiary care public hospitals in Karachi offering oncology services for all kinds of cancers including cervical cancer. The patients from all over the province of Sindh as well as other provinces visit this facility for the treatment of all kinds of cancers. Hence, for the sake of this study women of age 18 years or above, presenting at Oncology OPD of JPMC and with biopsy proven recent diagnosis of cervical cancer were approached and invited to participate in this study. The study participants were recruited by applying a convenient sampling technique. However, written informed consent was obtained from each study participant at the time of enrollment in the study and data collection. Any eligible woman who was not willing to provide written informed consent was excluded from the study. The ethical approval for this study was obtained from the Institutional Review Board of Jinnah Postgraduate Medical Center, Karachi. The sample size for this study was calculated using OpenEpi software for an approximate finite population of 120 cervical cancer patients attending JPMC Oncology department in a year. Hence, at a 5% level of significance, precision of 5% and anticipated population proportion of 46 % we obtained a sample size of 92. (3, 8)

The data was collected using a structured questionnaire which was translated into local language i.e. Urdu and pre-tested for cognitive validity as well as lingual validity before the start of actual data collection. The information was collected regarding the socio-demographic characteristics such as age, sex, literacy, marital status, age at first marriage, number of marriages, parity, ethnicity and occupation. The information regarding disease diagnosis including histopathology findings or type as well as stage of cancer were also gathered from the medical records available with the patient. The patients whose cancer staging or diagnosis was incomplete were followed on phone to collect the required information. All the data was collected by trained data collectors. Patients` privacy was maintained during the process of data collection while the confidentiality of the information related to each study participant was maintained throughout the study by following standard procedures and principles of biomedical ethics.

The data was analyzed using SPSS version 24. Descriptive statistics were calculated for the socio-demographic and health related characteristics. Chi-square test of significance was applied to assess the possible differences in the presentation of disease due to differences in various socio-demographic characteristics.

Results:-

In total 104 patients who visited the OPD at the Oncology department at JPMC during the study period were approached and invited to participate in this study. However, only 92 of these women provided informed consent and participated in this study with a response rate of 88%. All the study participants were married Pakistani women from various ethnicities.

The mean age of study participants was 53.4 years + SD10.9 years and the minimum age of any women presenting with cervical cancer in our study sample was 25 years. However, 4.3% (n=04) of all the cervical cancer patients who participated in this study were of age between 25 to 35 years. The highest proportion of study participants was recorded for the age group between 47-57 years with a proportion of 37.0% (n=34) and the age group 58 years or above with a proportion of 34.8% (n=32). Majority of the study participants were illiterate i.e. 67.4% (n=62). 94.6% (n=87) of all the study participants were home makers while only 5.4% (05) were employed or working for income generation purposes. The most common ethnicity was Urdu followed by Sindhi with a proportion of 54.3% (50) and 28.02% (n=26) respectively. The mean duration of marriage as reported by the participants was 33.5 years +11.8 years. 62% (n=57) of all the women presenting with study participants had a history of multiparty with at least five or more children while 65% (n=60) of all the study participants were postmenopausal women. 59.8% (n=55) of all the study participants were found to have Stage-II and Stage-III disease at the time of diagnosis while Squamous Cell Carcinoma was identified as the most frequent histopathological diagnosis (Table: 1).

The study participants reported a variety of symptoms related to cervical cancer. Most frequently reported symptom was pain in the lower abdomen with a proportion of 54.3% (n=50). 47.8% (n=44) of the study participants reported having postmenopausal bleeding while 35.9% (n=33) of the study participants reported having vaginal discharge (Figure: 1).

The study also compared various social demographic and disease related characteristics among women in different age groups (Table: 2).The study found statistically significant differences in literacy, marriage duration, parity and reproductive phase or status (p-value < 0.05).

Discussion:-

Literature supports that age is more than 50 years, illiteracy and parity more than five among the common risk factors for the development of cervical cancer. Moreover, age older than 50 years is found to be associated with cervical cancer. This study aimed to see the pattern of cervical cancer presentation among women diagnosed with cervical cancer with respect to age, parity and stage of disease. In our study, the average age of women who were diagnosed with cervical cancer was 53.4 years. This is comparable to the previous estimates for the age of cervical cancer diagnosis from Pakistan as well as countries like India, Morocco, Tanzania and Kenya. (8-12) The advanced stage at diagnosis among older women can be explained by the limited financial and social empowerment of older women as well as reduction in number of visits to healthcare facilities once they complete their family or reach menopause; hence limited chances of Pap smear test for cervical cancer screening. The older women become much more dependent on others for her healthcare needs in countries where healthcare is expensive or health insurance is not provided by the government. However, in some populations the diagnosis is delayed even in younger women due to lack of awareness regarding disease and related signs and symptoms (12-14). The evidence from Pakistan reports severe lack of awareness regarding cervical cancer and available screening tests among women as a major barrier to cervical cancer screening; hence resulting in diagnosis in advanced stages of the disease. (15) This also supports a considerably lower number of study participants in the youngest age group i.e. 25-35 years.

In this study the average age at first marriage or at the time of first intercourse was 20 years which is in line with the previous studies.(8,9) Majority of the women with cervical cancer diagnosis were uneducated, had parity more than 5 children, postmenopausal and diagnosed at Stage-II and Stage- Hence, these findings are in line with the previous studies conducted in Pakistan and similar populations as well as populations from a different genetic and sociocultural background such as Nigeria.(16-20).

This study didn't find significant differences in the disease and social demographic characteristics of women with cervical cancer from different age groups except for literacy, parity and reproductive status. This can be explained largely by the smaller sample size of this study. Similarly this study couldn't find any significant differences in the histopathological diagnosis among women with cervical cancer from different age groups which is contrary to previous evidence.(21)

These findings can be explained by the limited sample size of this study. Moreover, the particular study setting of this study specifically represents the women from lower and lower-middle class of the society who cannot afford private cancer treatment. This warrants the need of large scale studies with sufficient sample size and probability sampling technique to obtain more reliable and valid estimates. Nevertheless, this study has provided a good analysis in terms of epidemiology of cervical cancer among women in Pakistan presenting in one of the biggest

tertiary care hospitals in Karachi; for the treatment from different ethnic and social backgrounds.

This study has few inherent limitations as this study only collected information from one public sector hospital of Karachi, Pakistan; hence generalization of the study finding is not possible. Similarly, the average age at first marriage can be much lower than what is reported by this study for rural populations and women from specific cultural or ethnic backgrounds. Moreover, in this study every participant reported only one marriage in her lifetime which may not be true for some study participant's but we believe that their responses must be affected by the sociocultural stigma attached to marriages of a woman in context of Indo-Pak culture. Similarly, again considering the cultural sensitivity we couldn't ask about the number of sexual partners in case one has any partner outside the marital bond. In addition, this study didn't collect information about the history of past infection with Human Papilloma Virus (HPV), screening for HPV infection, history of vaccination for HPV infection as well as history regarding use of cervical Pap smear for screening among the study participants. The availability of HPV vaccination and implementation of Pap smear for screening purposes have widely changed the epidemiology of cervical cancer in many developed as well as developing countries. (22) Nevertheless, this study presents much needed evidence about cervical cancer epidemiology in the local context.

Figures:

Figure 1:- Frequency of presenting signs and symptoms reported by patients with Cervical Cancer visiting OPD at Oncology Department JPMC, Karachi (n=92).

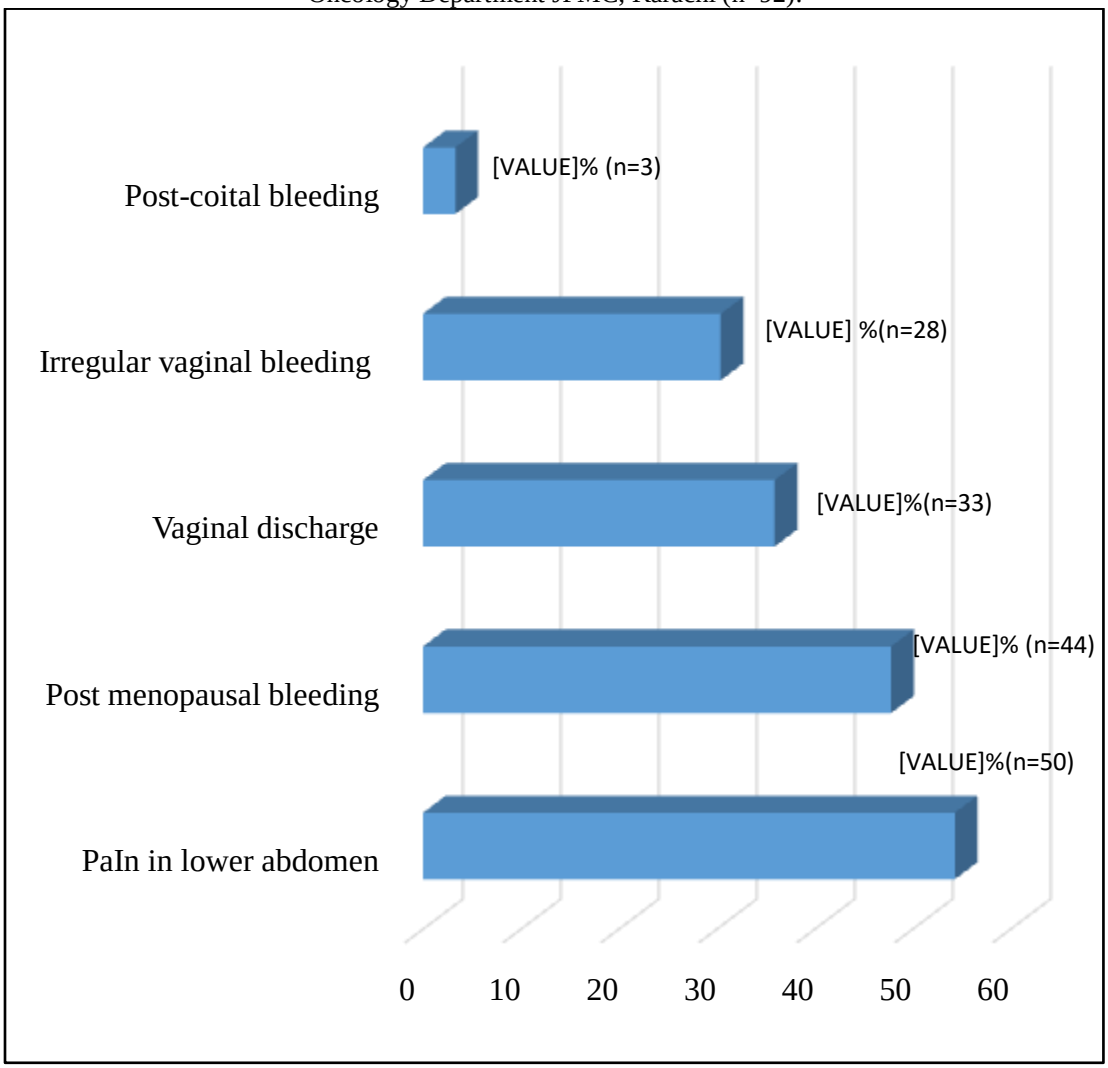

Table 1:- Socio-demographic and health-related characteristics of the study participants diagnosed with Cervical Cancer at Oncology Department JPMC, Karachi (n=92).

Variable	Frequency (n)	Percentage (%)
Mean Age:53.4(SD+10.9)		
Age (in completed years)		
25- 35 years	04	4.3
36 -46ears	22	23.9
47-57years	34	37.0
58 years and above	32	34.8
Education		
Illiterate	62	67.4
Literate	30	32.6
Occupation		
House maker	87	94.6
Employed	05	5.4
Ethnicity		
Sindhi	26	28.2
Urdu	50	54.3
Punjabi	06	6.5
Balochi	01	1.1
Pashto	06	6.5
Others	03	3.2
Age at first marriage (in completed years)		
Median age: 20 years (IQR: 3 years)		
< 18 years	06	6.5
18-23 years	79	85.9
24 years and above	07	7.6
Duration of marriage (in completed years)		
Mean Duration: 33.5 years (SD +11.8 years)		
10 years or less	02	2.2
11-20 years	10	10.9
21-30 years	26	28.3
31 years or more	54	58.7
Number of alive children /parity		
1-2 children	06	6.5
3-4 children	39	31.5
5 or more children	57	62.0
Reproductive Phase or Menstrual status		
Premenopausal Phase	32	34.8
Postmenopausal Phase	60	65.2
Cancer stage at the time of diagnosis		
Stage-I	15	16.3
Stage-II	30	32.6
Stage-III	25	27.2
Stage-IV	22	23.9
Histopathological diagnosis		
Squamous Cell Carcinoma	80	87.0
Adenocarcinoma	11	12.0
Others	01	1.1

Table 2:- Socio-demographic and health-related characteristics of the study participants diagnosed with Cervical Cancer at Oncology Department JPMC, Karachi (n=92).

Variable	**25- 35 years (n=4)**	**36 -46ears (n=22)**	**47-57 years (n=34)**	**>58 years (n=32)**	**p-value**
	Frequency (Percentage)				
Education					
Illiterate	04(6.5)	20(32.3)	25(40.3)	13(21.0)	0.001
Literate	0	02(6.7)	09(30.0)	19(63.3)	
Occupation					
House maker	0	01(20.0)	02(40.0)	02(40.0)	1.0
Employed	04(4.6)	21(24.1)	32)36.8)	30(34.5)	
Age at first marriage					
< 18 years	0	02(33.3)	02(33.3)	02(33.3)	
18-23 years	03(3.8)	18(22.8)	29(36.7)	29(36.7)	0.214
24 years and above	01(14.3)	02(28.6)	03(42.9)	01(14.3)	
Duration of marriage					
10 years or less	02(100.0)	0	0	0	
11-20 years	02(20.0)	08(80.0)	0	0	<0.001
21-30 years	0	14(53.8)	12(46.2)	0	
31 years or more	0	0	22(40.7)	32(59.3)	
Number of alive children /parity					
1-2 children	02(33.3)	01(16.7)	01(16.7)	02(33.3)	<0.001
3-4 children	02(6.9)	13(44.8)	13(44.8)	01(3.4)	
5 or more children	0	08(14.0)	20(35.1)	29(50.9)	
Reproductive Phase					
Premenopausal Phase	04(12.5)	22(68.8)	04(12.5)	02(6.3)	<0.001
Postmenopausal Phase	0	0	30(50.0)	30(50.0)	
Cancer stage					
Stage-I	02(13.3)	03(20.0)	05(33.3)	05(33.3)	
Stage-II	01(3.3)	09(30.0)	12(40.0)	08(26.7)	0.613
Stage-III	0	06(24.0)	11(44.0)	08(32.0)	
Stage-IV	01(4.5)	04(18.2)	06(27.3)	11(50.0)	
Histopathological diagnosis					
Squamous Cell Carcinoma	04(5.0)	04(36.4)	03(27.3)	04(36.4)	0.55
Adenocarcinoma	0	01(100.0)	0	0	
Others*	0	17(21.3)	31(38.8)	28(35.0)	
Others=Neuroendocrine tumor					

Conclusion:-

The common age of presentation of cervical cancer is between age 47 to 57 years. And women with high parity at higher risk and squamous cell carcinoma is the most common pathological type. While most patients had stage 2 disease.

Abbreviations:

1. HPV = Human Papilloma Virus
2. Nuclear Institute of Medicine and Radiotherapy (NIMRA)

References:-

1. Daniyal M, Akhtar N, Ahmad S, Fatima U, Akram M, Asif HM. Update knowledge on cervical cancer incidence and prevalence in Asia. Asian Pac J Cancer Prev. 2015;16(9):3617-20. doi: https://doi.org/10.7314/apjcp.2015.16.9.3617.
2. Batool SA, Sajjad S, Malik H. Cervical cancer in Pakistan: A review. J Pak Med Assoc. 2017 Jul 1;67(7):1074-7.
3. Mukhtar R, Mehmood R, Parveen S, Hussain M, Arif M. Prevalence of cervical cancer in developing country: Pakistan. Global J Med Res. 2015;15(3).
4. Wasim T, Mushtaq J, Wasim AZ, Raana GE. Gynecological malignancies at tertiary care hospital, Pakistan: A five-year review. Pak J Med Sci. 2021 May-Jun;37(3):621-627. doi: https://doi.org/10.12669/pjms.37.3.3596.
5. Tabassum S, Masood AI, Khakwani M. Pattern of female gynecological malignancies in south Punjab Region of Pakistan: An overview of 5 years. Professional Med. J. 2021 Jan 10;28(01):90-5. doi: https://doi.org/10.29309/TPMJ/2021.28.01.4665.
6. Bibi S, Ashfaque S, Laghari NA. A heartrending burden of gynaecological cancers in advance stage at nuclear institute of medicine and radiotherapy Jamshoro Sindh. Pakistan Journal of Medical Sciences. Pak J Med Sci. 2016 Jan-Feb;32(1):120-4. doi: https://doi.org/10.12669/pjms.321.8663.
7. Riaz L, Manazir S, Jawed F, Ali SA, Riaz R. Knowledge, perception, and prevention practices related to human papillomavirus-based cervical cancer and its socioeconomic correlates among women in Karachi, Pakistan. Cureus. 2020 Mar 5;12(3):e7183. doi: https://doi.org/10.7759/cureus.7183.
8. Aziz N, Yousfani S. Pattern of presentation of cervical carcinoma at Nuclear Institute of Medicine and Radiotherapy, Pakistan. Pakistan. Pak J Med Sci. 2013 May;29(3):814-7.
9. Frida KM, Atieno WMC, Habtu M (2017) Socio-Demographic Factors Associated with Advanced Stage of Cervical Cancer at Diagnosis in Kenyatta National Hospital, Kenya: A Cross Sectional StudyJ Cancer Sci Ther 9: 554-561. doi: https://doi.org./10.4172/1948-5956.1000473.
10. Rani R, Kumar R, Trivedi V, Singh U, Chauhan R, Ali M, Kumar A. Age, parity and stages of cervix cancer: a hospital based study. Br J Med Health Res. 2016;3(4):73-82.
11. Mlange R, Matovelo D, Rambau P, Kidenya BPatient .and disease characteristics associated with late tumour stage at presentation of cervical cancer in Northwestern Tanzania. BMC Women's Health. 2016 Jan 25;16:5. doi: https://doi.org/10.1186/s12905-016-0285-7.
12. Berraho M, Obtel M, Bendahhou K, Zidouh A, Errihani H, Benider A, Nejjari C. Sociodemographic factors and delay in the diagnosis of cervical cancer in Morocco. Pan Afr Med J. 2012; 12:14.
13. Lim AW, Ramirez AJ, Hamilton W, Sasieni P, Patnick J, Forbes LJ. Delays in diagnosis of young females with symptomatic cervical cancer in England: an interview-based study. Br J Gen Pract. 2014 Oct;64(627):e602-10. doi: https://doi.org/10.3399/bjgp14X681757.
14. Tekalign T, Teshome M. Prevalence and determinants of late-stage presentation among cervical cancer patients, a systematic review and meta-analysis. PLOS ONE. 2022 Apr 27;17(4):e0267571. doi: https://doi.org/10.1371/journal.pone.0267571
15. Khan GJ, Naeem HS, Khan S, Jamshaid T, Sajid MI, Bashir I, Jamshaid M. Understanding and responsiveness level about cervical cancer and its avoidance among young women of Pakistan. Asian Pac J Cancer Prev. 2014;15(12):4877-83. doi: https://doi.org/10.7314/apjcp.2014.15.12.4877.
16. Sreedevi A, Javed R, Dinesh A. Epidemiology of cervical cancer with special focus on India. Int J Womens Health. 2015 Apr 16;7:405-14. doi: https://doi.org/10.2147/IJWH.S50001.
17. Verma A, Verma S, Vashist S, Attri S, Singhal A. A study on cervical cancer screening in symptomatic women using Pap smear in tertiary care hospital in rural area of Himachal Pradesh, India. Middle East Fertil. Soc. J. 2017 Mar 1;22(1):39-42. doi: https://doi.org/10.1016/j.mefs.2016.09.002
18. Rodrigues AN, de Melo AC, de Carvalho Calabrich AF, Cronenberger E, Torres KL, Damian F, Cossetti R, de Azevedo CR, da Fonseca AJ, Nerón Y, Nunes J. Characteristics of patients diagnosed with cervical cancer in Brazil: preliminary results of the prospective cohort EVITA study (EVA001/LACOG 0215). Int J Gynecol Cancer. 2022 Feb;32(2):141-146. doi: https://doi.org/10.1136/ijgc-2021-002972.
19. Karadag Arli S, Bakan AB, Aslan G. Distribution of cervical and breast cancer risk factors in women and their screening behaviours. Eur J Cancer Care. 2019 Mar;28(2):e12960. doi: https://doi.org/10.1111/ecc.12960.
20. Azeez OA, Laima CH, Yahaya UR, Onuwabuchi E, Lawan A, Farouk HU. Clinico-pathological analysis of cervical cancer in Gombe, North East Nigeria; a ten year retrospective study. JMSCR. 2020;8(3):691-5. doi: https://dx.doi.org/10.18535/jmscr/v8i3.118.
21. Kong Y, Zong L, Yang J, Wu M, Xiang Y. Cervical cancer in women aged 25 years or younger: a retrospective study. Cancer Manag Res. 2019 Mar 6:2051-8. doi: https://doi.org/10.2147/CMAR.S195098.

22. Chan CK, Aimagambetova G, Ukybassova T, Kongrtay K, Azizan A. Human papillomavirus infection and cervical cancer: epidemiology, screening, and vaccination—review of current perspectives. J Oncol. 2019 Oct 10;2019:3257939. doi: https://doi.org/10.1155/2019/3257939.