ASSESSMENT OF THE SURVIVAL RATE AMONG THE CERVICAL CANCER WOMEN: AN ORIGINAL RESEARCH

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ABSTRACT

Aim

Purpose of our research was to assess the survival rate amongst women who were suffering from cervical cancer.

Methodology

A retrospective-cohort study was conducted amongst 200 patients from Jan 2021 to Jan 2022. A systematic random sampling method was employed to select the study participants. Data were extracted from the patient card, and through phone calls. The data was collected using the android version CS-Entry tool. Data was analysed by SPSS version 25. Kaplan and Meier's method was used to estimate survival functions and Cox-proportional hazard regression analysis was carried out in order to identify the independent predictors of time to death.

Results

The overall incidence of death was 31 per 100 person-years of follow up. The median (IQR) follow-up time of the entire cohorts was 18.55 (8.96–49.65) months. The independent predictors for time to death included; age older than 50 years [AHR: 1.4; 95% CI: 1.1–1.9], late stage of CC at diagnosis [AHR: 2.2; 95% CI: 1.7–2.9], No CC treatment [AHR: 2.1; 95% CI: 1.5–3.1].

Conclusion

The death rate of CC patients was high. The significant predictors associated with shorten time to death of CC patients were older age, advanced cancer stage at diagnosis.

Keywords Cervical cancer, morbidity, mortality, cancer screening.

INTRODUCTION

10 years ago, cervical cancer (CC) ranked as the third most common cancer among women worldwide. However, in 42 low-resource countries, it was the most common cancer in women.[1] The knowledge that persistent infection with carcinogenic human papillomavirus (HPV) types is the main cause in triggering the development of cervical cancer has opened new pathways for primary and secondary prevention.[2] The implementation of both methods of prevention can make cervical cancer occurrence and death largely avoidable. Consistent evidence indicates that the licensed bivalent and quadrivalent HPV vaccines containing HPV16 and HPV18 antigens protect with high efficacy against infection and precancerous cervical lesions associated with these types when individuals are not yet exposed.[3] Both types jointly cause 70–75% of all cervical cancers and

40–60% of its precursors.[4,5] In the past few years, a nonavalent vaccine has also been licenced, which protects against seven carcinogenic HPV types that, together, cause approximately 90% of cervical cancers.[6]The treatment of precancerous lesions detected by microscopic inspection of cells scraped from the cervix has been the paradigm of secondary prevention of cervical cancer for half a century.[7] Although cytological screening has undoubtedly led to a major decline in cervical cancer burden in several resource-rich countries, the method might have reached its limits, with reportsfrom several countries with longstanding high-quality Pap smear-based programmes indicating that trends have either stabilised or began to rise.[8] Meta-analyses and pooled analyses of randomised trials have shown that screening with HPV tests protects better against future cervical precancerous lesions and invasive cancers than screening by cytology[9,10] and, therefore, virological screening programmes are becoming increasingly recommended.[11,12]Given the availability of these new preventive tools, public health experts are challenged to define comprehensive integrated strategies that combine HPV vaccination and cervical cancer screening that fit the target populations within the limits of cost-effectiveness.Recently, the WHO Director-General launched an ambitious call to all nations of the world to mobilise resources to make an end to suffering from cervical cancer.[13] Now more than ever, effective cervical cancer control planning requires access to accurate statistics. According to WHO, one of the fundamental steps in the action plan for non-communicable diseases is to establish a high quality surveillance and monitoring system that provides, as a minimum standard, reliable population based statistics data on the major non-communicable diseases.[14]improved health services, cervical cancer screeningcampaigns, health professional's competency and other related changes are expected to affectthe survival of cervical cancer patients.[15] For those all reasons, it is very significant to studythe current survival status of CC patients and predictors of time to death among CC patients.

AIM OF THE PRESENT STUDY

Purpose of our research was to assess the survival rate amongst women who were suffering from cervical cancer.

METHODOLOGY

The study populations were all women who had been diagnosed with CC and enrolled from Jan 2021 to Jan 2022. The systematic random sampling procedure was used to select patient cards. The starting point for the retrospective follow-up was the date of diagnosis with CC and the endpoint of the follow up was the date of death (from patient card or by phone call), date of lost to follow up (last visit or of last contact) or the end date of follow-up period. The data were collected by reviewing records from patients' registration book and individual follow- up chart using pretested data collection form. The data were collected electronically using android tablet. The questionnaire template was coded by using open source software for Computer Assisted Personal Interviewing. Ethical clearance was taken from institution review board and informed consent was also taken from all 200 participants. Basic descriptive analyses were done and presented as frequency and percent for categorical variable. Continuous variables were reported with mean and standard deviation (SD) and in terms of median (inter quartile range). Kaplan Meier survival curve with a log-rank test was fitted in order to evaluate the presence of a difference in survival time among various predictor variables. The crude and adjusted hazard ratios with their 95% Confidence Intervals (CI) were estimated, and p-values less than 0.05 were used to declare the presence of statistically significant correlation between predictors and survival time.

RESULTS

The mean ± standard deviation (SD) of participant's age was 50 ± 11 years. Majority of the study participants, 73.8% were married and 69.1% were rural residents. (Table 1) From the total of 200 (64.5%) cervical cancer patients died during the follow up period, 42.6% were early stage and the rest 57.4% were late stage. Majority of the study participants, 86.8% had a well differentiated histological grade and 94.2% had Squamous cell carcinoma. Regarding the treatment, 87.6% had started treatment and 5.8% had surgery, 29.8% had Chemotherapy with radiotherapy and 37.6% had radiotherapy alone.

The overall median survival time of the study participants from the Kaplan and Meier survival analysis was 17.6 months (95% CI: 14.0–19.2). The median survival time between stages of cancer showed a significant difference with 28.6 months (95% CI: 23.7–33.4) among early stage and 1.6 months (95% CI: 10.4–12.5) among late-stage patients. Regarding age, the median survival time of study participants with age 50 and younger was significantly higher than those with age older than 50 years; 19.2 months (95% CI: 13.5–18.2) and 15.8 months (95% CI: 14.1–19.3) respectively. Study participants who received any cancer treatment during the follow up period had a median survival time of 17.9 months (95% CI: 13.33–22.4) while the median survival time for study participants who didn't receive any treatment was 9.1 months (95% CI: 6.9–11.3). The median survival time of study participants who had surgery was found to be significantly higher than those who don't have surgery, 42.4 months (95% CI: 34.9–49.9) and 27.6 months (95% CI: 25.1–30.1) respectively. Cancer

patients who were diagnosed at early stages (stage I and II) lived for longer time than patients diagnosed at late stages (stage III and IV), P-Value = 0.0001 (Table 2)

Table 1- Socio-demographic characteristics of participants in the present study

CHARACTERISTICS	TOTAL (N = 200) NUMBER (%)
Age in years	
Less than 39	14.5
40–49	32.1
50–59	29.7
Greater than 60	23.7
Marital status	
Married	61.8
Unmarried	39.2
Place of residence	
Urban	30.9
Rural	69.1

Table 2- Survival time among different groups

CHARACTERISTICS	MEDIAN SURVIVAL TIME ESTIMATE (95% CI)	P-VALUE
Age		0.005
Less than 50	19.2 (13.5–18.2)	
More than 50	15.8 (14.1–19.3)	
Residence		0.555
Urban	18.6 (10.8–26.4)	
Rural	16.1 (13.7–18.6)	
Stage at diagnosis		0.0001
Early	28.6 (23.7–33.4)	
Late	11.6 (10.4–12.5)	
Chemotherapy		0.443
Yes	17.8 (122–23.4)	
No	15.5 (122–18.8)	
Radiotherapy		0.127
Yes	14.1 (11.0–17.1)	
No	17.8 (12.8–22.7)	
Surgery		0.002
Yes	27.6 (25.1–30.1)	
No	15.8 (13.7–17.9)	

DISCUSSION

With almost 0·6 million cases and 0·3 million deaths per year, cervical cancer continues to constitute a major public health problem, ranking as the fourth most common cause of cancer incidence and mortality in women worldwide. This rise could be driven by the growth and aging of the global population,[16] Because the mean age at diagnosis of cervical cancer is quite low compared with that of most other major cancer types, it generates proportionally greater loss of life years.[17] Age-specific analyses clearly indicated that cervical cancer occurred across a range of ages during which adult women have many economic and caregiving responsibilities for their families. The absence of a further rise in incidence after age 40 years in high resource countries could reflect cancers prevented by screening, although hysterectomy might have also partly contributed to a reduced number of cervical cancer cases.

Other cofactors, such as some sexually transmittable infections (HIV and *Chlamydia trachomatis*), smoking, and oral hormonal contraception, might also contribute to changes and contrasts in the global cervical cancer burden.[18] However, other putative factors related to socioeconomic development and transitions to a lifestyle more typical of high-income countries (including reproductive and sexual factors) seem to underpin major changes in cancer risk, the effect of which was seen in the lowering of cervical cancer rates over time and concomitant rises in breast cancer rates in several countries with emerging economies.[19]

In this study, advanced age was found to be one of the predictor of CCP survival [AHR: 1.4; 95% CI: 1.1–1.9]. Women who are older than 50 years are two times more likely to die within

five years than women who are 50 and younger at diagnosis. Previous studies also reported that older age at diagnosis is associated with lower survival time of cervical cancer patients. A study from japan revealed that, advanced stage at diagnosis was the main determinant of poor survival among the aged CC patients. Several studies also found poor cervical cancer prognosis and higher rate of mortality among older women with cervical cancer. This may be due to the presence of more advanced disease among older women at diagnosis, and older women receive less aggressive treatment as compared to their younger counterparts.[20]

Cervical cancer kills approximately 300 000 women and affects nearly 600 000 women yearly, particularly middle aged women and those living in lower-resource settings. However, most cervical cancers and related deaths can be avoided by integrated HPV-based screening and vaccination. WHO is developing a global plan of action to engage stakeholders and mobilise resources to make cervical cancer a rare disease globally through an ambitious scale-up of national services over the next decades.

CONCLUSION

The death rate of CC patients was high. The significant predictors associated with shorten time to death of CC patients were older age, advanced cancer stage at diagnosis. Therefore, improving early detection and initiation of treatment for all CC patients is necessary in order to improve patient's survival status.

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