

Evaluation of clinical features and 5 year survival rate of patients with squamous cell carcinoma of the cervix

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Abstract

Introduction: Cervical cancer is the most common cancer among women that each year causes death of a large number of people. In most cases cervical carcinoma has squamous cell carcinoma pathology. Because this cancer is common, deadly and preventable, this study aimed to investigate the clinical characteristics and 5 year survival rate of patients with squamous cell carcinoma of the cervix.

Method: This cross-sectional study was conducted using a questionnaire on 80 patients with at least 5 years of cervical cancer who were treated in radiotherapy centers of Yazd during the year 2009. Data were analyzed using SPSS15 and the Log Rank and Chi Square tests.

Results: Overall, of the total number of patients, 38 patients (47.5%), had 5-year survival rate. The most common clinical symptom was irregular vaginal bleeding (33.8%), followed by bleeding after menopause (11.2%). Patients with early stage disease had a 100% survival rate and patients with an advanced stage had a survival rate of 44%. According to the results, stage of disease ($P = 0.04$) and menopausal status of individuals ($P = 0.004$) plays a role in survival.

Conclusion: According to a 5-year decrease in survival rate with increasing stage of disease, screening of this cancer in at risk populations is essential for early diagnosis.

Key words: Invasive cervical cancer, Cervix, Cervical carcinoma, Survival rate

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Introduction

Cervical cancer is the most common cancer in women that each year causes death of a large number of people (1). Epidemiology of cervical cancer is related to different living conditions in different populations so that 80% of new cases of cervical cancer and deaths resulting from it, have been observed in developing countries (2). Annually 493,000 new cases of cervical cancer are diagnosed worldwide and it kills approximately 274,000 women per year (3). This cancer is preventable because it has a long pre-cancerous stage and it is easy to reach by screening methods, in addition lesion treatment before the invasion is complete and effective (4). Just offering free screening methods for cervical cancer cannot prevent the occurrence of invasive cervix lesions but proper training in using them is essential (5). The two main ways to prevent this cancer are primary prevention including: hygiene promotion, lifestyle, healthy sexual behavior and vaccination against human papillomavirus and secondary prevention including screening methods (6). Cervical cancer prognosis depends on the severity of the disease at diagnosis, but this is not the only factor affecting the prognosis. Factors such as tumor size, grade and lymph-vessel emissions are also major factors in prognosis (7). The survival of patients varies according to different stages of the disease so that at early stages survival rate is 90% but when the disease is in its advanced stages the 5-year survival rate drops to 50-70% (8). In the early stages usually there is no symptom but symptoms of later stages are vaginal bleeding, pelvic pain, pain during sexual intercourse (8). Also the rate of distant metastasis increases with the progression of the disease (7). Among the factors causing precancerous cervix lesions or risk factors, HPV, early age of first intercourse (under 16 years), multiple sexual partners, the high number of pregnancies over 20 weeks, can be mentioned and also factors that weaken the immune system, including AIDS (9). Cervical carcinoma in 80-90% of patients has squamous cell carcinoma pathology and in 7-10% of cases adenocarcinoma and in rare cases includes acute histologic type cancer such as clear-cell carcinoma and mesonephric types which constitute 1-2% of malignancy of cervical cancer (10). Dysplasia usually does not have any clinical signs and often it is diagnosed by cytologic findings in Pap smear test. Since dysplasia is a temporary stage in the pathology of cervical cancer, therefore its immediate diagnosis and treatment is very important. Chemo-radiation and radical surgery raises longevity for early stage cervical cancer but the effective treatment of patients is limited by disease progression (11). Due to the common, fatal and preventability nature of this cancer, the aim of this study is to investigate clinical characteristics and 5 year survival rate of patients with squamous cell carcinoma of the cervix.

Method

This descriptive study is a retrospective analysis of survival and generally a cross-sectional study that was conducted on all patients with a minimum of 5 years of cervical cancer who had been treated during the year 2009 at one of the

radiotherapy centers of Shahid Ramezandadeh or Shahid Sadoughi hospitals of Yazd province, Iran.

Inclusion criteria

Patients older than twenty years who had passed at least one year from the time of their marriage, and had Pap conditions were enrolled.

Exclusion criteria

Patients with a history of breast cancer, history of CIN I and CIN II or ovarian cancer were excluded from the study.

The study is based on questionnaire data of 80 female patients.

The questionnaire included questions about the patient's age, stage, symptoms, menopause status and time of the initial diagnosis. Information of patients was recorded in designed questionnaires and then survival was defined by phone call.

Statistical analysis:

All data were encoded and after being ensured about the integrity of data, information was analyzed using software SPSS version 16. Log Rank, Chi Square test and Kaplan Meir charts were used for statistical comparisons. In all statistical tests, $P < 0.05$ was considered as significant level.

Results

Frequency of clinical manifestations in patients are seen in Table 1. The most prevalent clinical symptom was irregular vaginal bleeding (36.2 %) and the lowest was abnormal Pap smear test (1.2 %).

The average of overall survival of patients:

Overall of 80 patients enrolled in the study, at 5 years 38 patients (47.5%) survived and 42 patients (52.2 %) died. Survival rate of patients in 6 months was 98.8%, one year 93.8%, 2 years 81.3%, 3-year 70%, 4-year 55% and 5-year 47.5%. (Figure 1)

Mean survival of patients according to age groups:

First group 30-44 years with 20 patients had survival rate of 60%, the second group 45-60 years with 36 patients had survival rate of 47.2%, the third group above 60 years with 24 patients had survival rate of 37.5%. There was numerical difference between survival rates in three age groups, but in spite of that, this difference was not statistically significant with respect to $P = 0.31$ which was calculated from Log Rank test results. (Figure 2)

Average survival rate according to stage in patients:

Five patients (6.2%) in this study were in the early stage and had 100% survival rate, and in advanced stage we had 75 patients (93.8%) who had 44% survival rate. According to $P=0.04$ obtained from the Log Rank test, the difference between these groups was statistically significant (Figure 3).

Table 1: Frequency of clinical manifestations in patients

| Clinical manifestations | Frequency | Percentage |
|-----------------------------|-----------|------------|
| Irregular vaginal bleeding | 29 | 36.2 |
| Bleeding after menopause | 27 | 33.8 |
| Spotting | 9 | 11.2 |
| Stomach ache | 8 | 10 |
| Abnormal vaginal secretions | 3 | 3.8 |
| Bleeding after intercourse | 3 | 3.8 |
| Abnormal Pap Smear Test | 1 | 1.2 |
| Total | 80 | 100 |

Figure 1: Mean of overall survival of patients within 5 years

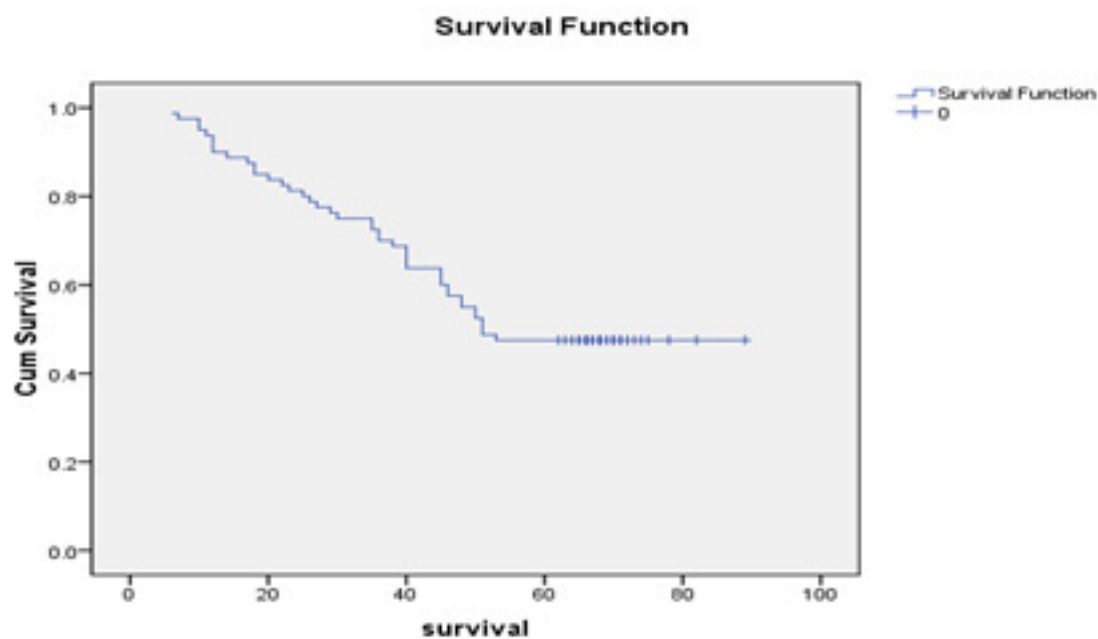


Figure 2: Comparison of the mean survival of patients according to the age groups

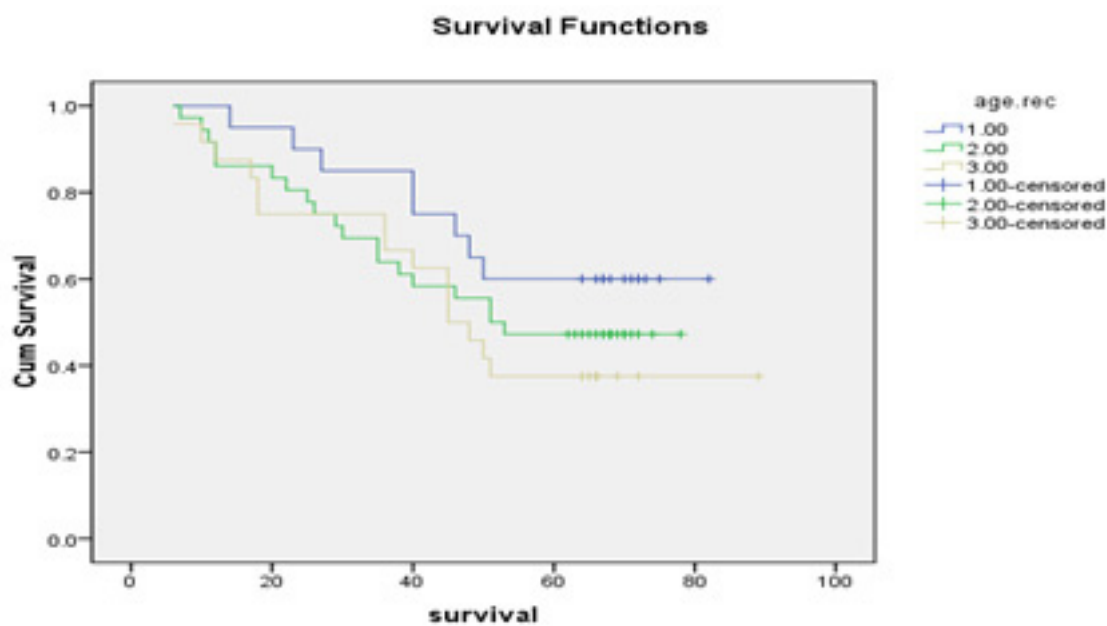


Figure 3: Comparison of the mean survival by stage

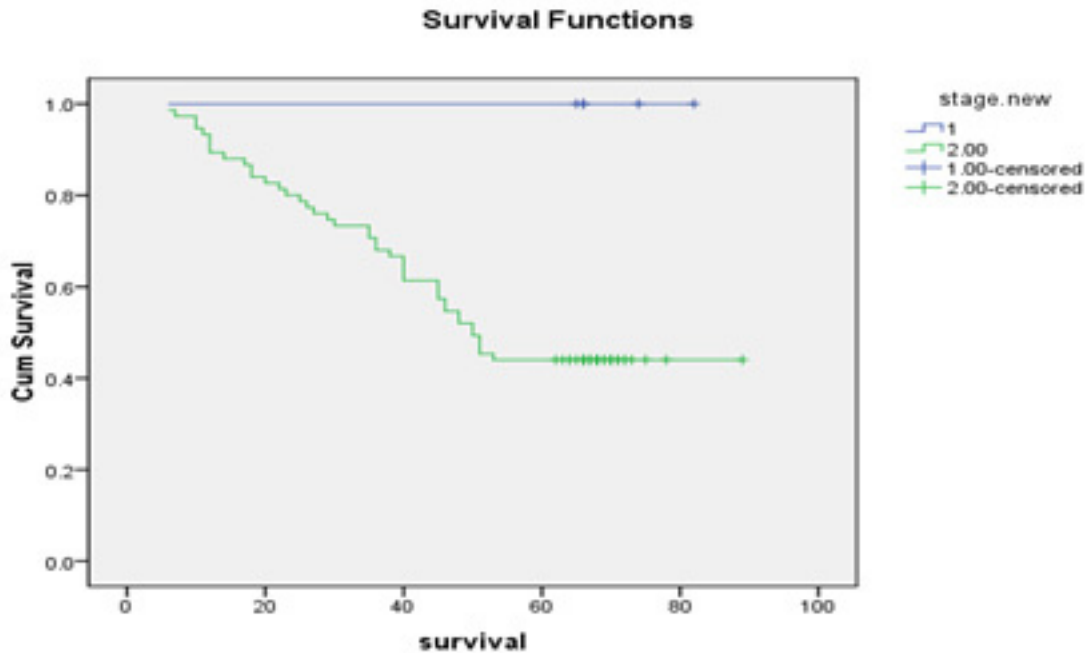
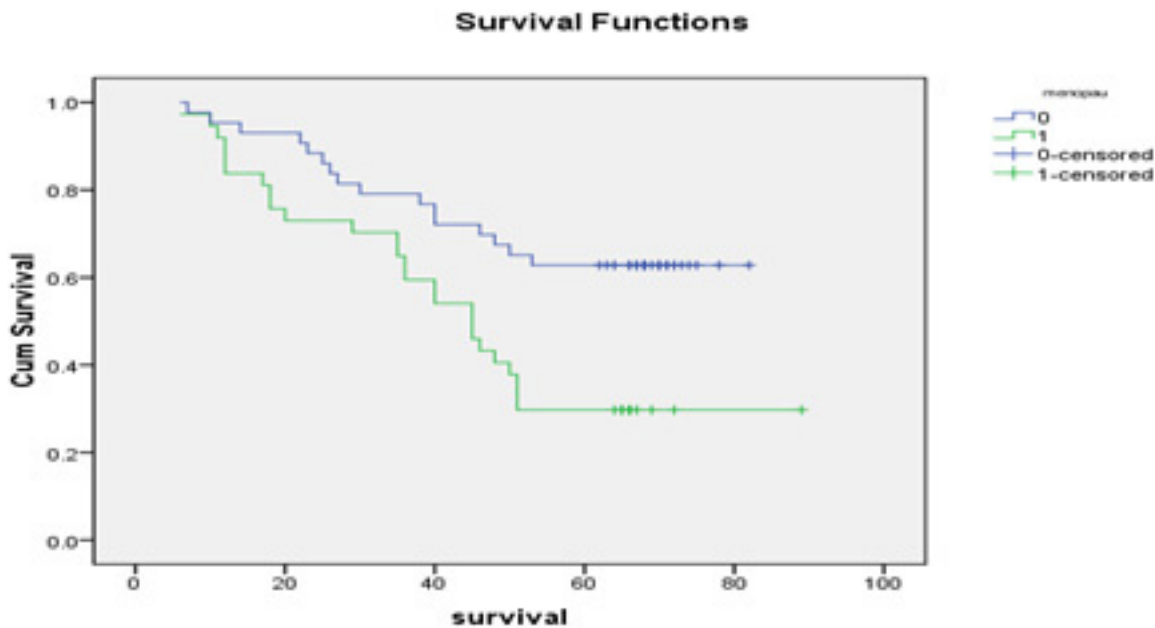


Figure 4: Comparison of the mean survival of patients according to menopausal status



Mean survival of patients according to menopausal status. Of the total number of patients in this study 37 patients (46.2%) were menopausal, with a survival rate of 29.7% and 43 patients (53.8%) were non-menopausal with a survival rate of 62.8%. According to $P = 0.004$ obtained from the Log Rank test, there was no significant difference between mean of these situations (Figure 4).

Discussion

This study was conducted with the aim of determining the 5-year survival rate of patients with squamous cell carcinoma of the cervix in 2008-2009 who referred to Radiotherapy Center of Shahid Ramezandadeh and Shahid Sadugi hospitals of Yazd and investigating factors such as age,

stage, diagnosis time and menopausal status on survival. The results of the present study showed there was no significant correlation between the survival and age. In a similar study in the US, SEER and colleagues studied three main groups of 20-49 years (56.9%), 50-69 (29.7%) and over 70 years (13.5%). According to the results of this study for all women 5 year survival rate decreased with increasing age, so that the survival rate in the first group was about 79%, second group 65%, and third group 49% (12). Results of two other studies by Federico and Carol showed that the age factor independently can affect prognosis of patients as older patients have considerably weaker survival rate and weaker screening pattern (13, 14). Another study that was conducted by Stacey A. Fedewa showed that older women are more likely to have cervical cancer so that in the final stages percentage of disease

had increased by increasing age(15). The results of the study of Jean-Luc Brun showed that age is a significant prognostic factor in women with cervical cancer and advanced stages of the disease significantly increases after 65 years(16). The results of these studies are inconsistent with results of this study. In the present study comparing the average survival of patients according to age groups showed no significant correlation. This inconsistency may be due to low population of this study which can act as a confounding factor for statistical analysis and also the present study only investigated the cases of cervical squamous cell carcinoma, but the above studies explored all cancers. Another study that was conducted by Michel and colleagues at the University of Michigan showed that the age factor does not affect the survival rate which is consistent with the findings of the present study (17). This result may be due to the study and consideration of the patient's general conditions and health of the elderly (which is influential on the response to treatment) in the study of Michel and lack of its investigating in other studies.

The results of this study showed that the survival rate of patients has adverse association with disease stage. In the SEER study as well as the present study the survival rate decreased with increasing stage (12). 59.2% of patients were in the early group and the rest of the patients were in the advanced group. In the present study only 5% of patients were in the early group that shows lack of screening culture among Iranian women so that only one case of cervical cancer was known from abnormal Pap smear and most patients have referred to doctor when symptoms started which obviously increases the stage of disease. In two other studies that were conducted by Wabing and Carol stage was recognized as a determinant of survival (14, 18). Also another study that was conducted by H.H. Chung showed that the survival rate is directly related to the disease Stage so that the 5 year survival rate for I, II, III, IV stages were respectively 94.2%, 69.7%, 38.9% and 21.1% (19). The results of these studies are consistent with the results of this study. If cervical cancer is not detected in early stages, cancer cells may also spread to other organs and also if the treatment is in the early stages it will be more successful but in advanced stages, there are severe complications, poor prognosis and poor response to treatment.

In this study, the survival rate for menopausal women was reported as 29.7% and for non-menopausal 62.8%. Study which was conducted by SEER showed that early stages of the disease in patients with lower age is more prevalent (stage 1 prevalence in patients under 70 years and over 70 was respectively 64.9% and 34.1%). In the event that disease progression in patients over age 70 has increased significantly it was (frequency of stage 4 in patients under 70 and over 70 years was respectively 5.9% and 14.4%) (12). This may show that in menopause the disease is more severe than other patients and presumably this lowers survival in menopause patients and this is consistent with the two studies that indicate the unfavorable situation of screening in higher ages. This result can be due to hormonal changes during menopause

because factors that have an impact on sex hormones and cause their swinging increase risk of cervical cancer. In this study, the most common clinical manifestations were irregular vaginal bleeding and bleeding after menopause. This result was consistent with Nushin Aziz's study where the most common initial clinical manifestations were: Irregular vaginal bleeding, foul smelling vaginal discharge, post coital bleeding and the study of Michael where 68% of patients had bleeding manifestations (17, 20). Various studies show that the most common symptoms of cervical cancer is abnormal bleeding so that cervical cancer has a very strong role in post-menopause bleeding and it is a major cause of malignancy. However, in the study of Anunobi the most common clinical manifestation was post-menopausal bleeding (53/3%) and 16.7% of patients were referred with inter-menstrual bleeding manifestations (21). This difference may be attributed to the older age of patients in the study of Anunobi.

Conclusion

Given that cervical cancer is most common and the most deadly cancer among the female population and by increasing age and disease stage, the survival rate decreases, therefore, implementing a screening system and screening of populations at risk and also more effective treatment with a focus on cancer diagnosis in the early stages seems essential.

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