RESEARCH COMMUNICATION

Outcome of Cervical Cancer in Iranian Patients According to Tumor Histology, Stage of Disease and Therapy

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Abstract

Background: Cancer of cervix, the second most common cancer of women overall, is a leading cause of cancer death in developing countries. The purpose of this study was to measure outcome of treated cervical cancer cases in Yazd since 2002 to 2009, according to pathology, stage of disease, lymph node involvement and therapy. Materials and Methods: 100 cases were enrolled and survival was determined through phone calls to generate 3 and 5- year-survival rates, evaluated by long-rank test with SPSS software. Results: Mean age of the patients was 53.6 years, and 3 -year survival was 75.9 %(mean of 59.4 months). In first months, survival was the same in both pathology types, but because of the higher stages of squamous cell carcinomas in comparison with adenocarcinomas, their overall rate was lower. Stage IIB and IIIB survival rates were 90.9% and 30.8%, respectively, and rates with and without lymph node involvement were 64.8% and 80.1%. With para-aortic lymph node involvement, the rate was 85.8% (mean of 65.3 months). In patients who underwent surgery and chemoradiation, the respective figures were 71.6% and 54.9%. Anemic and non-anemic rates were 50% and 78%. Conclusion: 3-5 year survival of cervical cancer fluctuates in the range of 70 to 93%. The relationship with lymph node involvement is weak. Survival of women receiving chemotherapy was lower than after surgery. Our findings showed an importance of diagnosis in primary stages and surgical resection of pelvic and para-aortic lymph nodes.

Keywords: Survival rate - cervical cancer - stage of disease - pathology - therapy - lymph node involvement

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Introduction

Cancer of cervix, 2nd common cancer of women, is the leading cause of cancer death in developing countries (Magne et al ., 2008; Spensley et al., 2009). In Iran, it's the 2nd common gynecologic cancer following breast cancer and 2nd common cause of cancer death following ovarian cancer (Mousavi et al., 2008; Karimi et al., 2009). Multiple risk factors such as marriage in young age, pregnancy at youth, numbers of sexual partners, multi parity, smoking, routine screening tests, etc predispose women to cancer of cervix (Karimi et al., 2010).

Prognosis and 3-year survival rate of cervical cancer fluctuate in range of 70% to 93%. Many factors such as clinical stage, pathology, pelvic and Para- aortic lymph nodes involvement, vagina and parameter involvement, Hb level before chemotherapy, etc influence survival of cervical cancer cases (Behtash et al., 2009). Outcome of patients like survival and toxicity related to therapy are important factors to be considered (Spensley et al., 2009).

The aim of this study was to measure survival of treated cases of cervical cancer from 2002 to 2009 according to pathology, stage of disease, lymph nodes involvement and type of therapy.

Materials and Methods

This cross-sectional descriptive study was conducted on invasive cervical cancer cases treated in Shahid Sadoughi hospital since 2002 to 2009. The method of sampling was convenient. Inclusion criterion was all invasive cervical cancer cases confirmed by pathology who were on therapy, while exclusion criteria were change of diagnosis during therapy, low compliance of patients and loss of follow up, not having access to all patients to fulfill the documents. Finally, 100 cases were enrolled in this study. The data were collected through hospital documents. Survivals of patients was reviewed during next 7 years and at the end, 3 & 5-year survival rate of patients were measured by Long-rank test according to pathology, stage of disease, lymph nodes involvement and type of therapy. The data were analyzed by SPSS software.

Results

Mean age of cases was 53.6 (29-90) years. Demographic characteristics and distribution of frequency of tumor characteristics were studied (Tables 1 & 2). In this study, 53 (53%), 17(17%) and 70 (70%) cases were

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passive smoker, active smoker and be exposed to smoke; respectively.

It should be noted that only 2% of our patients had Pap smear. Survival rate according to pathology was estimated which was equal in first 22 months in both SCC and adenocarcinoma cases. However; 3-year survival rate of adenocarcinoma and SCC was 87.5% and 75%; respectively.

Clinical staging was done as below

Primary stages including IB: N=13(13%) IA2: N=3(3%) and IIA: N=1(1%)

Advanced stages including IIB: N=26(26%) IIIA: N=3(3%) IIIB: N=27(27%) IVA: N=15(15%) and IVB: N=12(12%)

Three and 5-year survival of our patients was 75.9%. Mean survival rate was 59.44 months. Therefore; survival of cases was measured according to clinical stages too, which was significant in stages IIB and IIIB. (p=0.000) Lymph nodes involvement was detected in 49% of cases. 9 patients had Para-aortic lymph nodes involvement too.

Vagina of 42% of cases was involved. (14 cases: 2/3 upper segments and 28 cases: total vagina) It should be noted that the parameter of 80 cases was involved too. 3 and 5-year survival rate on the base of pelvic lymph nodes involvement was 64.8% (mean survival: 41.5 months), while this was 80.1% (mean survival: 63.38 months) in patients with intact pelvic lymph nodes (p=0.026).

If para-aortic lymph nodes were involved, survival was just 4 months, while 3 and 5-year survival rate and mean of survival was 85.8% and 65.37 months; respectively in whom those lymph nodes were intact.

8%, 33%, 57%, 24% and 72% of cases underwent blood transfusion, operation, full chemotherapy, external chemotherapy and adjuvant chemotherapy; respectively. According to operation, 3 and 5-year survival rate was 96.7% (mean of survival: 71.63 months) and 45.8% (mean of survival: 35 months) in operated and not operated cases; respectively (p=0.001).

Table 1. The Patients Survival Rates Related to Prognostic Factors

Characteristic	Percent	3year survival	P-value
Histology			<0.001
Squamous cell carcinoma	79%	75%	
Adenocarcinoma	19%	87/5%	
Adenosquamous	2%	-	
FIGO stage			<0.001
AI	13%	-	
IIB	26%	90/9%	
IIB I	27%	30/8%	
Pathologic nodal status			0.026
N-	32%	85/1%	
N+ pelvic	49%	64/8%	
N+ paraaortic	19%	-	
Treatment			
Surgery	33%	96/85%	0.001
Radiotherapy	57%	45%	
Chemotherapy	72%	54%	0.038
Anemic effect			0.001
Anemic	44%	71%	
Non anemic		50%	

Table 2. Charectheriz of Tumor in Patient

P	N	variable
Tumor size		
47%	47	4cm ≥
49%	49	4cm ≤
Grade of Patology		
30 %	30	1
45%	45	2
16%	16	3
9%	9	Not –reported

Table 3. Demographic Charectheriz in Patient

P	N	variable
84%	84	Age of Marriage Lower 18 Years old
20%	20	Nnumber of Marriage
89%	89	Age of pregnancy lower 20 Years old
86%	86	pregnancy More than 5 cases
77%	77	Diliviri more than 5 cases
70%	70	smoking
38%	38	Nnumber of Marriage in patient hasbend
2%	2	Pap-smear

Three and 5-year survival rate in patients received chemotherapy was 54.9% (mean of survival: 40.29 months) (p= 0.038). Survival rate of anemic women was 50%, while it was 52% in non anemic women (p=0.001). Latest follow up showed no evidence of tumor residue in 52% of cases, while 38% of patients died due to their disease. 2 women died due to another cause. However; 8 cases had relapse of their disease.

Discussion

This study estimate 3 and 5-year survival of invasive cancer of cervix according to pathologic and therapeutic factors such as pathology, clinical stage, lymph nodes involvement and type of therapy. Due to insufficient number of cases, 3 and 5-year survival rate was considered equally and estimated 75.9% (mean of survival: 59.44 months) which was similar to other studies.

In another study done in Colombia (Solis et al., 2007), 3-year survival rate was 68.3% (mean of survival: 41 months). 3-year survival rate was 93% according to a study done in Tehran (Behtash et al., 2009). Spensly et al., showed 70% and 60% as 3 and 5-year survival rate in their patients; respectively (Spensley et al., 2009). However; 5-year survival of another study was 93.5% (Gari et al., 2008). In our study survival of both types of tumor was equal in first months according to pathology, but regarding higher stage of SCC, 3-year survival of adenocarcinoma was higher (87.5% vs. 75%).

Finally, due to less cases of adenocarcinoma, survival rate of adenocarcinoma reported less than SCC. In other studies, survival of both types of tumor was the same (Rouzier et al., 2005; Yasuda et al., 2006; Vinh-Hung et al., 2007). Unfortunately, only 2% of our cases had Pap smear, so most of cases were diagnosed at higher stages. There was a significant relationship between survival and stage IIB (26%) and IIIB (27%).

Previous studies showed that survival rate is less in patients diagnosed at advanced stages of the disease. Our findings showed higher survival of cases in stage IIB than

stage IIIB. Different studies reported 5-year survival of stage IIB disease in range of 55.2 to 81.5%. In Roozier et al., study, it was reported as 62 % (Rouzier et al., 2005).

It seems, on clinical staging, some cases of stage IIA were classified as stage IIB by mistake, which explain higher reported survival of stage IIB in comparison with similar studies (90.9%). Survival of stage IIIB was 30.8% in this study.

In a similar study, survival of stage IIIB was 34% (Grigiene et al., 2007). It's recommended to do more similar studies on a bigger sample size to measure survival of other stages of this disease too. As expected, lymph nodes involvement decreases survival rate, which was more significant if Para-aortic lymph nodes are involved.

Our findings were similar too, but due to insufficient cases, 3 and 5-year survival was the same. Survival rate in patients with and without pelvic lymph node involvement was 64.8% and 80.1%; respectively. This statistic was 58% and 82% respectively in Kasamatsu et al study (2004).

As most of our cases with para-aortic lymph nodes involvement suffered from distant metastases simultaneously, survival was low (4 months). In patients with intact para-aortic lymph nodes, survival and mean of survival was 85.8% and 65.3 months; respectively.

In a study done in Korea, with respect to low percentage of cases with distant metastases, 3-year survival rate of cases with Para-aortic lymph nodes involvement was 13% (Choi et al., 1997). This report shows importance of early diagnosis of patients, complete surgery and resection of pelvic and Para-aortic lymph nodes (Behtash et al., 2009).

Survival rate in operated cases was 71.6% and 69% in current and the Kasamatsu et al study, respectively. 5-year survival rate in women receiving chemo radiation was 54.9% in our study. Survival rate in anemic and non anemic cases was 50% and 78%; respectively according to findings of Tan study, which was confirmed by our findings too.

In conclusion, In our study, 3 and 5-year survival rate was 75.9% with mean survival of 59.44 months. 3-year survival of adenocarcinoma and SCC was 87.5% and 75%; respectively. Survival of stage IIB was much more than stage IIIB. It should be noted that survival rate was reported 64.8% and 80.1% in patients with and without pelvic lymph nodes involvement; respectively. Survival rate was 85.8%, 71.63% and 54.9% in cases with intact Para-aortic lymph nodes, operated and whom on chemo radiation; respectively. This was 50% and 78% in anemic and non anemic cases; respectively which was similar to previous studies.

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