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Assessment of the Quality of Life of Patients Treated for Cervical Cancer

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Abstract

Objective: The present study aims to analyze the quality of life of survivors of cervical cancer according to the menopausal status and the treatment modalities at the Institute National Oncology of Rabat.

Methods: Patients were interviewed with the specific questionnaire to patient with cervical cancer developed by the Organization of the European Commission for research and cancer treatment-Group Quality of life (EORTC QLQ-C30) and the EORTC Quality of Life Questionnaire (QLQ)-CX24 and translated into Moroccan dialect.

Results: One hundred thirty-nine patients survivors cancer of the cervix and regularly followed participated in the study. Quality of life was significantly altered in postmenopausal patients in areas such as physical functioning (p=0.016), diarrhea and nausea vomiting (p=0.038), menopausal symptoms (p=0.01) and financial difficulties. Regarding sexual functioning, postmenopausal women reported less activity and sexual pleasure. The irradiated patients presented more symptoms such as diarrhea (p=0.018), lymphedema, and more financial difficulties (p=0.012) than those who did not. Symptoms such as diarrhea (p=0.038), pain (p=0.019) were significantly greater in those who underwent surgery associated with another treatment (irradiation) as well as insomnia, loss of appetite, constipation and financial difficulties (p=0.018). However, there was no significant difference in other areas of quality of life in our survivors of cervical cancer.

Conclusion: patients treated by several modalities for cervical cancer have an altered quality of life in various fields. However, in long term survivors, overall quality of life remains similar in patients operated and or irradiated. They must be informed by the various possible side effects that may affect the quality of life after treatment.

Keywords: Quality of life • Cervical cancer • Treatment

Introduction

Cervical cancer is a major public health problem. It is the fourth most common cancer in women in the world, with an incidence exceeding 520,000 cases. The incidence rate increases with age, but some cases are diagnosed at a young age (7.6% of cases are diagnosed before age 35). Most cases are squamous cell carcinomas (87%). About 60% are diagnosed in stages I and II, while 5.4% of cases are diagnosed in stage IV locally advanced stages [1,2]. Due to early detection and effective treatment, the 1- and 5-year survival rates for the early disease are 87% and 71%, respectively [3,4]. For patients with locally advanced disease, the concurrent chemoradiotherapy (CCRT) and intra cavitary brachytherapy (ICBT) are now the treatment of choice [5,6].

The presence of side effects such as fatigue, diarrhea, nausea and vomiting, urinary incontinence, lymphedema, vaginal stenosis, lack of vaginal lubrication, dyspareunia, sleep disorders, stress, and depression are common and affect the quality of life of mostly young patients at diagnosis and this implies a long life with the effects secondary and sequelae of treatment [7].

Decreased self-esteem, poor body image due to uterine removal in young women who have not completed childbearing and a negative impact on sexuality have been found in several studies [4,8]. Some studies show more late side effects after radiation therapy than after surgery [9]. Chemotherapy in combination with other modalities improves survival rates but increases the risk of side effects [9-11].

As the overall survival of patients with cervical cancer improves, the importance of quality of life is increasingly recognized. Quality of life linked to health is defined by the World Health Organization as: "It is the perception that an individual has of his place in existence, in the context of the culture and value system in which he lives concerning his goals, expectations, standards, and concerns. It is a very broad concept influenced in a complex way by the physical health of the subject, his psychological state, his level of independence, his social relations as well as his relation to the essential elements of his environment" [12].

In this context, the present study aims to analyze the quality of life of patients treated for cervical cancer in terms of menopausal status, treatment modalities at the National Institute of Oncology (NIO) of Rabat.

Materials and Methods

A cross-sectional study of 139 women diagnosed with cervical cancer and treated at NIO of Rabat and whose monitoring is regular. The women having palliative care, communication/cognition difficulties, under simultaneous treatment of other types of cancer were excluded.

have been interviewed and we used the Arabic version of the questionnaire specific to the patients with cervical cancer developed by the Commission of the European Organization for Research and Treatment of Cancer Quality of Group life EORTC QLQ-C30 and the Quality of life Questionnaire EORTC QLQ-CX24 [13,14].

Socio-demographic data and clinical characteristics of the patients were

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collected (age, education, function, marital status, stage of the disease, and treatment received).

The EORTC QLQ-C30 (version 3.0) includes 30 items measuring functioning (physical functioning, emotional, cognitive and social role and overall health/Quality of life) and symptoms (fatigue, nausea and vomiting, dyspnea, insomnia, loss of appetite, constipation, diarrhea, and financial difficulties). All scales and single items go from 0 to 100. A high score for all functioning scales and overall health/QoL scales represents a good level of functioning/high quality of life, while a high level of a score for a symptom scale or item represents a high level of symptoms or problems [13].

The QLQ-CX24 contains 24 items summarized in three scales: the experience of symptoms, body image, and sexual/vaginal functioning, and six simple items: lymphedema, peripheral neuropathy, menopausal symptoms, sexual anxiety, sexual activity, and sexual pleasure. For multiple items and single items (except for sexual activity and pleasure), a high score equals more symptoms/problems. For the items' sexual activity and pleasure, a higher score indicates fewer problems [13].

Statistical Analysis

Statistical analyzes were performed using statistical descriptive methods and analysis of covariance. For analysis, patients were divided into groups based on menopausal status and treatment received: (a) surgery ± adjuvant therapy, no surgery, and (b) irradiation ± other therapy, no irradiation. Age, duration of follow-up (years), and tumor stage were considered to be potential confounders. Differences in age and follow-up time between groups were analyzed by t-test or by analysis of variance, respectively. The difference stage between groups was analyzed using an exact test chi-square. Besides, an analysis of covariance was performed with the three group factors of age, follow-up, and tumor stage as Co-variables. This analysis was done to find out which of these factors or Co-variables have the greatest impact on the quality of life. We also tested how statistically significant results were expressed in terms of clinical relevance (difference of greater than 10 points). The analyzes were performed using the software of statistical SPSS developed by IBM in version 20.0.0

Results

Characteristics of the population

The mean age of the patients was 59.6 ± 10 years; the mean follow-up time was 7.5 ± 6 years. The different stages of cervical cancer and the various treatment options were well represented. Squamous cell carcinoma was the histological type in 89.2%. The stage II and III FIGO 2009 (Federation International of Gynecology logy and Obstetrics) represent 56.9% and 20.1% respectively. Concomitant chemoradiotherapy followed by brachytherapy was the treatment in 55.4%, CCRT alone in 14.4% of cases. Surgery was associated with radiotherapy in 17.3% of cases and surgery alone was the treatment option in 12.9% of cases. The distribution of patients was balanced regarding the menopausal status and treatment modalities. The majority of patients were illiterate in 72.7% of cases and 91.4% reported being a housewife 6.5% said they lived alone. 18.7% were nulliparous while 20.1% of them were large multiparous (more than 5 children). Only 90 patients (64.74%) answered questions related to sexuality (Table 1).

QoL related to menopausal status

Patients were menstruating in 42.44% at diagnosis with a mean age of 42.3 ± 5 years and 57.55% were postmenopausal with an average age of 59.4 ± 10 years. There was a significant difference between these two groups (p<0.001). The mean follow-up time for patients who were menstruated was 10.8 ± 5.8 years, while that for menopausal patients was 5 ± 4.5 years, very significant (p<0.001) (Table 2).

We noted some significant differences in the quality of life between groups concerning physical functioning (p=0.016); postmenopausal women with a higher mean score. The symptoms such as nausea, vomiting was significantly higher in postmenopausal (p=0.038) (EORTC QLQ-C30). Regarding the EORTC QLQ-C24 questionnaire, only the individual items for menopause (p=0.01) and sexual activity (p=0.029) have a statistically significant difference. Thus the female menopause had more problems linked to menopause and women paid more problems regarding sexual activity. There is a clinically relevant difference in areas such as diarrhea and sexual activity.

QoL depending on the treatment received

QoL: Option surgery *vs.* surgery + irradiation *vs.* no surgery: Approximately 12.9% of patients were operated only (age average 58.8 ± 11

Table 1. Characteristics of the population.

Variables	Number of patients (total=139)	%
The average age at interview (years)	59.6 ± 10.6	
Age group		
≤ 40	5	3.6
40-49	21	15.1
50-59	39	28.1
60-69	56	40.3
≥ 70	18	12.9
The average age at diagnosis (years)	52 ± 12	
Average follow-up time (years)	7.5 ± 6	
Education		
Illiterate	101	72.7
Middle School	22	15.8
High school	14	10.1
University	2	1.4
Occupation		
Full time	2	1.4
Part-time	9	6.5
Housewife	127	91.4
Retired	1	0.7
Way of life		
Life alone	9	6.5
Withfamily	130	93.5
Marital status		
Married	90	64.7
Single	4	2.9
Divorcee	23	16.5
widow	22	15.8
Parity		
Nulliparous	26	18.7
<5	73	52.5
≥ 5	28	20.1
Unspecified	12	8. 6
Histology		
CE	124	89.2
ADK	13	9.4
Other	2	1.4
FIGO stade		
Stage I	28	20.1
Stage II	79	56.9
Stage III	28	20.1
Stage IV	4	2.9
Treatment received		
Surgeryalone	18	12.9
Surgery + irradiation	24	17.3
RCC only	20	14.4
RCC + curie	77	55.4

RCC : Radio-Chimio-Concomitante

Table 2. Quality of life according to menopausal status.

Variables	Settled	Menopause	p				P. clinical
	N=59 (42.44%)	N=80 (57.55%)	Between groups	Age	Tracked deadline	Stadium	
Age (years, mean ± SD)	42.3 ± 5.8	59.4 ± 10	**<0.001**				
Follow-up (years, mean ± SD)	10.8 ± 7.9	5 ± 4.9	**<0.001**				
Stage N (%)							
FIGO I	14 (23.7)	14 (17.5)					
FIGO II	35 (59.3)	44 (55)					
FIGO III	9 (15.3)	19 (23.8)					
FIGO IV	1 (1.7)	3 (3.8)	0.127				
EORTC QLQ-C30 (mean ± SD)							
Functional scales							
Physical functioning	71.3 ± 26.4	72.3 ± 19.5	**0.016**	0.549	0.706	0.114	No
Role functioning	26 ± 29.6	30.4 ± 27.8	0.4	0.213	0.508	0.228	No
Emotional functioning	31.6 ± 23.7	37.8 ± 26.7	0.120	0.999	0.413	0.260	No
Cognitive functioning	26.0 ± 23.4	33.5 ± 25.6	0.561	0.216	0.230	0.150	No
Social functioning	22.0 ± 29.3	24.8 ± 28.7	0.584	0.231	**0.016**	0.270	No
Overallhealth /QoL	75.0 ± 33.8	68.4 ± 31.5	0.477	0.293	0.317	0.887	No
Symptom scales							
Fatigue	28.6 ± 20.8	37.9 ± 22.6	0.682	0.957	0.703	0.369	No
Nausea and vomiting	13.3 ± 23.3	24.2 ± 27.9	**0.038**	0.988	0.083	0.136	**Yes**
Pain	27.7 ± 26.7	34.8 ± 23.1	0.127	0.225	0.281	0.868	No
Individual scales							
Dyspnea	18.6 ± 28.5	26.2 ± 27.4	0.682	0.669	0.838	0.853	No
Insomnia	24.9 ± 30.7	32.9 ± 30.7	0.331	0.463	0.306	0.993	No
Loss of appetite	20.9 ± 24.7	27.5 ± 28.9	0.259	0.096	**0.034**	0.570	No
Constipation	22 ± 29.4	30.0 ± 32.1	0.589	0.295	**0.036**	0.511	No
Diarrhée	20.9 ± 26.9	34.6 ± 33.7	0.155	0.256	0.132	0.811	**Yes**
Financial difficulties	52.0 ± 44.3	69.6 ± 41.1	0.059	0.592	0.195	0.166	**Yes**
EORTC QLQ-C24							
Multi-item scales							
Symptomexperience	22.4 ± 13.6	27.7 ± 15.9	0.770	0.997	0.346	**0.053**	No
Body mage	25.4 ± 26.6	28.1 ± 23.7	0.578	0.228	0.146	0.678	No
Sexual /vaginal functioning	18.5 ± 23	21.7 ± 19	0.459				No
Individual scales							No
Lymphedema	22.6 ± 31.8	28.3 ± 32.7	0.973	0.550	0.178	**0.045**	No
Peripheralneuropathy	28.8 ± 30	31.3 ± 32	0.895	0.209	0.711	0.278	No
Symptoms of menopause	32.2 ± 34.4	37.5 ± 27.2	**0.010**	0.892	0.234	**0.018**	No
Sexual worry	43.6 ± 34	44.4 ± 39	0.919	0.850	0.437	0.237	No
Sexual activity	46 ± 33	30.7 ± 32	**0.029**	0.328	0.747	0.287	**Yes**
Sexual pleasure	36.5 ± 32	27.5 ± 28	0.154	0.814	**0.029**	0.265	No

P: Clinical relevance ≥ 10 points of difference

years), 17.3% also benefited from other therapeutics modalities (mean age 57 ± 9 years) and 69.8% of patient have not been operated (mean age 60.4 ± 11 years).

In the EORTC QLQ-C30 questionnaires, we noticed some differences significantly in areas such as the pain (p=0.019), diarrhea (p=0.038), and financial difficulties (p=0.018) which were greater in women who have had surgery in addition to other treatments. Simple items such as insomnia, loss of appetite, constipation were clinically most important in the group surgical treatment + others. By considering the "age, follow-up time, and stage co-variables", we could note some significant differences in physical functioning and symptom scales (Table 3).

The EORTC QLQ-C24 questionnaire did not show a significant difference in the quality of life between the different groups. However, symptoms such as peripheral neuropathy and lymphedema were clinically more important in patients with surgery + other treatments. Also considering the Co-variable «age», there's a significant difference in sexual pleasure item between different groups: the surgery group + other treatments reporting the lowest score.

Quality of life: Irradiation option *vs.* no irradiation: Surroundings 87.1% of patients were irradiated (mean age 59 ± 11 years) with an average of monitoring 7.5 ± 6 years against 12.9% who were not irradiated (average age 58 ± 11 years) with a mean delay of 7.2 ± 8 years (Table 4).

In the EORTC QLQ-C30 questionnaire, only diarrhea and financial difficulties items were statistically different between the groups; patients irradiated have a greater score therefore more problems. Considering the monitoring period as co-variable domains such as loss of appetite, constipation, nausea, vomiting find themselves more impaired in irradiated patients.

Regarding the EORTC QLQ-C24 questionnaire, we did not note any significant difference between the different quality of life items. However, with age as co-variable score sexual pleasure is more impaired in patients who have not been irradiated. Symptoms of menopause, lymphedema, and sexual/vaginal functioning were clinically more important in irradiated women.

Table 3. Quality of life: surgery *vs.* surgery option + Irradiation *vs.* no surgery.

Variables	Surgery alone	Surgery + Irradiation	No surgery	p				P. clinical
	N=18 (12.9)	N=24 (17.3)	N=97 (69.8)	Between groups	Age	Tracked deadline	Stadium	
Age (years, mean ± SD)	58.84 ± 11	57 ± 9	60.44 ± 11	0.316				
Follow-up (years, mean ± SD)	7.16 ± 8.4	7.50 ± 7.5	7.56 ± 6.5	0.829				
Stage N (%)								
FIGO I	14 (73)	7 (29.2)	7 (7.3)					
FIGO II	5 (26.3)	14 (58.3)	60 (62.5)					
FIGO III	0	3 (12.5)	25 (26)					
FIGO IV	0	0	4 (4.2)	**<0.001**				
EORTC QLQ-C30 (mean ± SD)								
Functional scales								
Physical functioning	72.6 ± 23	73 ± 20	71.8 ± 22	0.226	0.544	0.634	**0.048**	no
Role functioning	25.5 ± 24	24 ± 30	30 ± 30	0.101	0.125	0.361	0.061	no
Emotional functioning	32.5 ± 25	37 ± 25	35.3 ± 25	0.352	0.513	0.097	0.150	no
Cognitive functioning	32.5 ± 23	27.7 ± 21	30.5 ± 24	0.566	0.056	0.074	0.125	no
Social functioning	23.6 ± 27	27 ± 28	22.7 ± 29	0.842	0.439	0.022	0.291	no
Overallhealth/QoL	70.2 ± 35	76 ± 23	70 ± 32	0.741	0.178	0.215	0.774	no
Symptom scales								
Fatigue	26.9 ± 17	29.2 ± 20	36 ± 23	0.080	0.130	0.341	0.929	no
Nausea and vomiting	14 ± 20	24.3 ± 25	20 ± 27	0.707	0.413	**0.006**	0.139	no
Pain	25.5 ± 24	24.3 ± 20	34.9 ± 25	**0.019**	0.079	0.084	0.191	no
Individual scales								
Dyspnea	19.3 ± 23	20.8 ± 23	24.3 ± 30	0.425	0.567	0.427	0.814	no
Insomnia	21 ± 27	31 ± 30	30.5 ± 31	0.324	0.063	0.707	0.619	**Yes**
Loss of appetite	17.5 ± 20	32 ± 30	24.3 ± 27	0.957	0.095	**0.030**	0.642	**Yes**
Constipation	19.3 ± 25	27 ± 32	27 ± 31	0.495	0.251	**0.014**	0.816	**Yes**
Diarrhée	14 ± 20	36 ± 27	30 ± 33	**0.038**	**0.027**	**0.012**	0.550	**Yes**
Financial difficulties	36.8 ± 45	75 ± 35	63.9 ± 42	**0.018**	0.665	**0.007**	0.590	**Yes**
EORTC QLQ-C24								
Multi-item scales								
Symptomexperience	20.9 ± 12.5	28.3 ± 16	25.7 ± 15	0.871	0.422	0.071	0.080	no
Body mage	24 ± 18	30.5 ± 25	26.6 ± 25	0.758	0.297	0.174	0.608	no
Sexual/vaginal functioning	17.8 ± 5	26 ± 5	19 ± 2.6	0.475	0.821	**0.036**	0.210	no
Individual scales								
Lymphedema	17.5 ± 20	27.7 ± 30	27 ± 34	0.969	0.744	0.478	0.081	**Yes**
Peripheralneuropathy	22.8 ± 33	33 ± 31	30.9 ± 30	0.154	0.175	0.711	0.098	**Yes**
Symptomsof menopause	22.8 ± 29	37.4 ± 28	37 ± 30	0.548	0.948	0.106	0.079	no
Sexualworry	38 ± 10	50 ± 9	43.9 ± 4	0.685	0.755	0.529	0.088	**Yes**
Sexualactivity	33.3 ± 9	31.3 ± 8	40.2 ± 4	0.563	0.576	0.182	0.446	no
Sexual pleasure	26.2 ± 8	20.8 ± 7	35.5 ± 3	0.179	**0.042**	0.505	0.660	**Yes**

P: Clinical relevance ≥ 10 points of difference

Discussion

Advances in the treatment of cancers and especially that of the cervix have improved the overall survival of patients and over 70% are cured today [10]. The issue of quality of life remains crucial for long-term survivors, especially when the pathology is discovered at a time when the woman has an active and always regulated sex life and this represented 42.44% of cases in our study. Our patients were illiterate in the most cases in 72.7% of cases, housewife in 91.4% of cases, and 93.7% of them live in families thus relatively surrounded on their own. This contrasts somewhat with the characteristics of the populations in several studies, in particular Greimeil et al., which found only 46% of patients living with families and 23.8% of housewives [14].

We studied the quality of life (QoL) using the EORTC QLQ-C30questionnaires and QLQ-CX24 which have been validated by several studies [4,15]. We have initially compared the QoL in post-menopausal women and the women settled and found more than physical functioning problems and sexual activity among menstruating women while postmenopausal had more problems in the symptom scales (nausea, vomiting, diarrhea, and menopausal symptoms) and more financial difficulties. Several studies have shown this alteration of sexual activity in especially young patients [4,16-18].

Patients treated by surgery only versus surgery + irradiation versus no surgery; and those associated with multiple modality treatments have reported more symptoms (pain, diarrhea), more financial difficulties, and less sexual pleasure. By correcting for age, follow-up period, and the stage of the disease, the symptoms were significant (constipation, loss of appetite, insomnia) and vaginal sexual functioning more impaired in those that were operated and irradiated. Several authors have made the same observations [1,4,12,14,19-21].

The QoL of patients treated by irradiation (87.1%) have then been compared with those who have not. There was a significant difference in the individual scales of diarrhea and financial difficulties; irradiated women with

Table 4. Quality of life: Irradiation option *vs.* no irradiation.

Variables	**Irradiation**	**No radiation**	**p**				**P. clinical**
	N=121 (87.1 %)	N=18 (12.9 %)	Between groups	Age	Tracked deadline	Stadium	
Age (years, mean ± SD)	59 ± 11	58 ± 11	0.739				
Follow-up (years, mean ± SD)	7.5 ± 6.7	7.2 ± 8	0.82				
Stage N (%)							
FIGO I	14 (50)	14 (50)					
FIGO II	74 (93.7)	5 (6.3)					
FIGO III	28 (100)	0 (0)					
FIGO IV	4 (100)	0 (0)	<0.001				
EORTC QLQ-C30 (mean ± SD)							
Functional scales							
Physical functioning	71.7 ± 22.5	72.6 ± 23.2	0.354	0.514	0.625	**0.073**	No
Role functioning	29 ± 29	25.5 ± 24	0.258	0.118	0.398	0.118	No
Emotional functioning	35.6 ± 25	32.5 ± 25	0.264	0.438	0.101	0.137	No
Cognitive functioning	30 ± 25	32.5 ± 23	0.816	**0.06**	0.087	0.174	No
Social functioning	23.6 ± 29	23.6 ± 27	0.579	0.435	**0.024**	0.226	No
Global health/QoL	71.4 ± 32	70 ± 35	0.908	0.187	0.242	0.942	No
Symptom scales							
Tired	35 ± 22	26.9 ± 17	0.231	0.122	0.379	0.805	No
Nausea and vomiting	20.4 ± 27	14 ± 20	0.673	0.419	**0.006**	0.266	No
Pain	32.7 ± 24	25.4 ± 24	0.162	0.074	0.113	0.439	No
Individual scales							
Dyspnea	23.6 ± 28	19.3 ± 23	0.553	0.55	0.447	0.918	No
Insomnia	30.8 ± 31	21 ± 27	0.17	0.06	0.74	0.533	No
Loss of appetite	25.8 ± 28	17.5 ± 20	0.268	0.094	**0.027**	0.999	No
Constipation	27.7 ± 31	19.3 ± 25	0.347	0.242	**0.016**	0.876	No
Diarrhée	31.1 ± 32	14 ± 20	**0.018**	**0.032**	**0.011**	0.39	**Yes**
Financial difficulties	66.1 ± 40	36.8 ± 45	**0.012**	0.583	**0.006**	0.922	**Yes**
EORTC QLQ-C24							
Multi-item scales							
Symptomexperience	26 ± 15	20.9 ± 12	0.492	0.42	0.066	0.168	No
Body mage	27/4 ± 25	24 ± 18	0.412	0.291	0.168	0.412	No
Sexual/vaginal functioning	17.8 ± 20	32.5 ± 30	0.648	0.92	**0.018**	0.301	**Yes**
Individual scales							
Lymphedema	27.2 ± 33	17.5 ± 20	0.726	0.74	0.51	0.114	**Yes**
Peripheralneuropathy	31.4 ± 30	22 ± 33	0.08	0.155	0.69	0.082	No
Symptoms of menopause	37.2 ± 30	22 ± 29	0.292	0.989	0.105	0.11	**Yes**
Sexual worry	45.1 ± 36	38 ± 38	0.516	0.78	0.56	0.065	No
Sexual activity	38.4 ± 34	33.3 ± 32	0.596	0.616	0.138	0.354	No
Sexual pleasure	32 ± 30	26.2 ± 32	0.478	0.077	0.813	0.33	No

P: Clinical relevance ≥ 10 points of difference.

a higher average score therefore more problems. By adjusting for age, duration of follow-up, and stage of the disease, we found more problems functioning physical, social, diarrhea, nausea, and vomiting, constipation, and insomnia in patients treated with radiotherapy ± other therapy compared to patients treated without radiation. Klee et al. [22] found that diarrhea can become a chronic symptom two years after radiation therapy. It should be noted that our patients are long-term survivors, the average time being 7 years and some followed for more than 10 years; which explains why we find in these patients only the chronic symptoms of the treatment [17,22].

We used validated questionnaires, the EORTC QLQ-C30, and EORTC QLQ-CX24. The results indicate that both questionnaires of quality of life can do to the distinction between groups of patients treated for cancer of the cervix. EORTC QLQ-CX24 has shown greater sensitivity to assess the impact on QOL including sexual and EORTC QLQC30 overall QoL. This confirms the validity and underlines the need to use these questionnaires. Clinical relevance is not always the same as the statistical significance and could be useful in assessing various effects of disease and therapy on QoL.

One of the limitations of our study is that it is cross-sectional without a control group of healthy women and there may be a bias with possible medical histories of the patients.

Conclusion

The patients are treated by several methods for cervical cancer have an impair quality of life in various areas but remain broadly similar in several areas in surviving long-term cancer. Interpretation of the results must take into account that the patients change their frame of reference staff overtime. Professionals must be aware of the patient's needs to talk about their disease long after treatment. Patients should be informed of the risk of psychological reactions. The more information they receive about possible symptoms, the better their ability to cope with them.

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