Sarcouncil Journal of Medical Series

ISSN(Online): 2945-3550

Volume- 04| Issue- 02| 2025

Research Article **Received:** 22-01-2025 | **Accepted:** 11-02-2025 | **Published:** 25-02-2025

Quality of Life of Iraqi Patients Suffering from Bladder Cancer

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Abstract: The present study comprised a total of 110 patients, who completed a questionnaire containing multiple questions. The aim of the study was to assess the quality of life of Iraqi patients suffering from bladder cancer. The study was designed according to the analysis of the results and demographic data of the Patients' Quality of Life Program, which was measured using a questionnaire distributed to patients to assess symptoms and... negative aspects that Iraqi patients experienced during the period from 2022 to 2024. In this study, a questionnaire consisting of 26 questions was distributed to patients according to The HRQoL, which included all social and psychological criteria, anxiety, and fear, in addition to pain. The results found that the most prevalent age group was The study found that the most prevalent age group was 40 to 50 years. The stage at diagnosis was as follows: I: 18.18% of patients. II: 36.36% of patients. III: 36.36% of patients. IV: 9.09% of patients. In this study, patients receiving treatment for bladder cancer demonstrated a significant enhancement in quality of life at the conclusion of treatment in all domains, though this was non-significant in the domains of "regarding the disease," "self-esteem," and "emotional state." However, the treatment proved to be statistically significant in the domains of "work-life," "daily life," and "sexual life." The enhancement in quality of life is observed to be early in comparison to the status of the patients prior to the treatment, with substantial variations noted in all domains during the second visit following the intervention. It is hypothesised that the treatment exerts a considerable influence on the patient's general condition upon its completion, thereby resulting in a substantial enhancement in their quality of life. Among the domains that have undergone significant modifications is the section entitled "Regarding the disease," where the score has been reduced by five points, which is indicative of an improvement in urinary tract problems.

Keywords: Diagnosis, Patients, Bladder cancer, QOL, Carcinoma, Urinary tract problems.

INTRODUCTION

Cancer is one of the leading causes of disease worldwide. In 2022, approximately 14 million new cases of cancer were reported, and in the same year, 8.2 million deaths were attributed to oncological diseases; it is estimated that 169.3 billion healthy life years will be lost globally in 2024 due to cancer cases where Bladder cancer ranks ninth in the world in terms of the number of diagnoses, considering both sexes, with 614,298 new cases in 2022 according to Globocan data. There are clear geographical differences, with urinary tract tumors being more common in Western Europe (including Spain) and North America than in Asia or Eastern Europe [Cumberbatch, M. G. K. *et al*., 2018; Babjuk, M. *et al*., 2019; Witjes, J. A. *et al*., 2020].

Bladder cancer is the fifth most common tumor in terms of the number of new cases diagnosed in Iraq in 2023, with 17,364 cases detected in men and 4,496 in women. However, it is ranked eighth in terms of deaths, with 4,434 people dying from this cause that year and. The main type of bladder cancer is called transitional cell carcinoma and arises in the cells that line the inside of the bladder, although it can also appear in other areas of the urinary system (ureters and urethra) [Milowsky, M. I. *et al*., 2016; Noon, A. P. *et al*., 2013; Saunders, C. L. *et al*., 2015].

The main risk factor is tobacco in all its forms. Carcinogenic substances have been identified in the urine of e-cigarette users, although their role in bladder cancer is not yet known. The second risk factor is occupational (aromatic amines, polycyclic aromatic hydrocarbons, and chlorinated hydrocarbons), accounting for about 10% of all cases. [Edmondson, A. J. *et al*., 2017; Reilly, M. C. *et al*., 1993]

In medicine, the prognosis of bladder cancer is estimated using statistical data collected over many years from studying people with the disease. The statistic that is usually used to explain prognosis is the relative survival rate or 5-year survival rate [McTaggart-Cowan, H. *et al*., 2019; Siracusano, S. *et al*., 2018; Siracusano, S. *et al*., 2018]. The 5-year relative survival rate is the percentage (proportion) of people with the same type and stage of bladder cancer who are alive for 5 years after their initial diagnosis compared to people in the general population. For example, the

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DOI- https://doi.org/ 10.5281/zenodo.14920828

5-year relative survival rate for localised bladder cancer is 71%. [Singer, S. *et al*., 2013] This means that people diagnosed with localised bladder cancer have a 71% chance of surviving 5 years after diagnosis compared to people without this type of cancer. [Catto, J. W. F. *et al*., 2021]

Cancer survival rates are usually discussed in terms of 5-year relative survival, which refers to the proportion of patients who are still alive five years after diagnosis. [Gilbert, S. M. *et al*., 2007] that statistics like these are based on large groups of people and cannot predict what might happen to an individual patient. The overall 5-year relative survival rate among people diagnosed with bladder cancer (including all stages of the disease) is 77.1%. [Casilla-Lennon, M. M. *et al*., 2018; Joly, F. *et al*., 2009; De Santis, M. *et al*., 2012] The National Cancer Institute records survival rates using broad categories. This study aimed to assess the quality of life of Iraqi patients with bladder cancer in addition to analyzing the risk factors in this study to patients.

MATERIALS AND METHODS

Collection Data

The study comprised a total of 110 patients who completed a questionnaire containing multiple questions. The reliability of the study was assessed using Cronbach's alpha and the kappa index, while the criterion validity was determined by studying the correlation between the scores obtained from the questionnaire and those from the FACT-BL questionnaire using Pearson's correlation coefficient. To ascertain the validity of the questionnaire and the study, demographic data and information were collected from several different hospitals in Iraq for the period between 2022 and 2024.

Study Design

This study was designed according to the analysis of the results and demographic data of the Patients' Quality of Life Program according to a questionnaire distributed to patients to assess the symptoms and negative aspects that Iraqi patients experienced during the period from 2022 to 2024.

Inclusion Criteria: All adult patients over 19 years of age, with histological confirmation, who received treatment. Exclusion criteria: Patients with incomplete histology results and/or insufficient data on medical history were excluded as information was collected through reviewing medical records and treatment forms performed in the outpatient system of the day hospital,

Age: from 20 to 50 years.
- Gender: Male and female.
- Tobacco use: Yes and no.
- Hemoglobin at diagnosis: ≤ 110 g/L and > 110 g/L.

In this study, a questionnaire consisting of 26 questions was distributed to patients according to The HRQoL, which included all social and psychological criteria, anxiety, and fear, in addition to pain.

STATISTICAL ANALYSIS

To achieve the proposed objectives, the information in the database was processed using the SPSS statistical package version 20.0. Summary measures were used for qualitative variables, and absolute and relative frequencies were expressed as percentages. The Kaplan-Meier method was used to estimate survival time, and the Log-Rank test was generally used to compare survival curves, while the Breslow test was used at the intersection of the curves. The significance level of α=0.01 was used. The results were presented in statistical tables and graphs.

DURATION OF THE STUDY

The study was approved by the Scientific Council of the Clinical Surgery Hospital for the period from 2022 to 2024 and the Ethics Committee for Clinical Research, who reviewed the quality of the project and proper adherence to ethical procedures. The research was designed and implemented in accordance with the ethical principles of medical research on human subjects, in accordance with the prevailing ethical standards of the national health system that benefits the entire community, as all personal data were treated with complete confidentiality. The treatment procedures applied to the patients were explained at the beginning, or when a change in treatment was required, and were included in the informed consent form, which was signed by all patients included in the study. Therefore, it was not necessary to request informed consent from the patients specifically for this research.

RESULTS

A cross-sectional study was conducted on 110 bladder cancer patients in Iraq, with demographic and data information being collected from multiple hospitals. The average age of the participants ranged from 20 to 50 years, with the most prevalent age group being 40 to 50 years, accounting for 52 patients (47.27%). The study also highlighted high obesity rates, with 30

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patients (27.27%) exhibiting a BMI >30 kg/m2. The majority of patients were smokers, as demonstrated in Table 1.

Table 1: Demographic characteristics and profile of patients with localized cancer in Iraq for 110 patients

Variable	F	P%
Age		
20-29	28	25.45
30-39	30	27.27
40-50	52	47.27
BMI, kg/m2		
24-27	40	36.36
28-31	40	36.36
>31	30	27.27
Smoking		
Yes	60	54.55
No	50	45.45
Education level		
Employed	30	27.27
Free Business	20	18.18
Retired	40	36.36
Unemployment	20	18.18
Monthly income$		
400-800	39	35.45
>800	71	64.55
Gender		
Male	80	72.73
Female	30	27.27
Stage at diagnosis		
I	20	18.18
II	40	36.36
III	40	36.36
IV	10	9.09

The following figure presents the findings of an evaluation of the quality-of-life rate of patients suffering from bladder cancer. The evaluation was conducted for 110 patients on all levels and aspects. The study revealed a decrease in the life score rate compared to patients after treatment with statistical significance. This decrease was found to be significant at the physical and psychological levels, in addition to the pain and social level. The results of the study are presented in the figure below.

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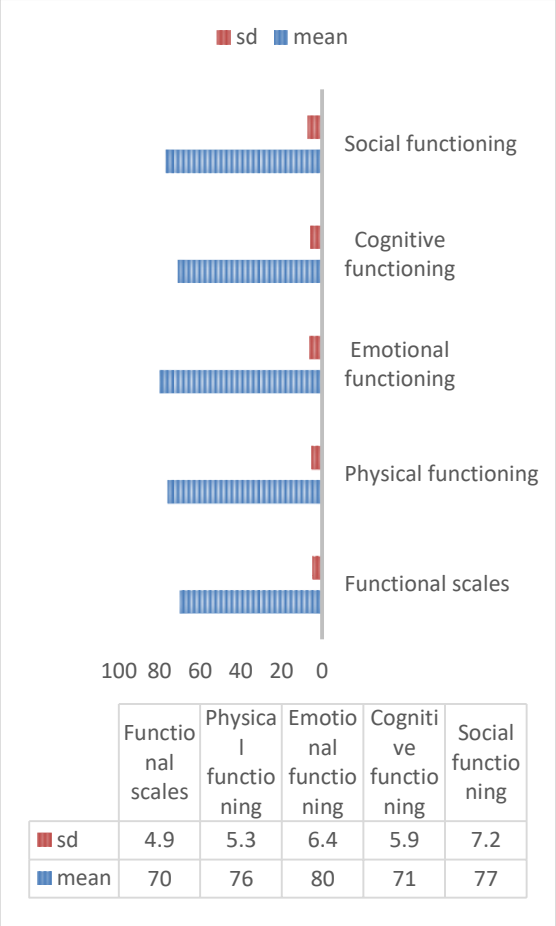

	Functional scales	Physical functioning	Emotional functioning	Cognitive functioning	Social functioning
sd	4.9	5.3	6.4	5.9	7.2
mean	70	76	80	71	77

Fig 1: Assessment outcomes of patients according to HRQoL

In the early stages of bladder cancer, when the disease is confined to the bladder, symptoms are typically non-specific and include bleeding, as well as a lack of symptoms or discomfort. The following symptoms may be present:

- Fatigue
- Nausea and vomiting
- Pain
- Dyspnoea
- Insomnia
- Appetite loss
- Constipation
- Diarrhoea

Table 2: Distribution of patients according to symptoms

v	f	P%
Fatigue	30	27.27
Nausea and vomiting	20	18.18
Pain	25	22.73
Dyspnea	19	17.27
Insomnia	10	9.09
Appetite loss	26	23.64
Constipation	19	17.27
Diarrhea	18	16.36

Table 3: Analysis of the diagnostic method used to treat patients and its prevalence

	f	P%
Cystoscopy	38	34.55
MRI	20	18.18
CT scan	32	29.09
Ultrasound	12	10.91
Urinary biomarkers	8	7.27

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The primary function of blood tests is to confirm the normal functioning of the kidneys. In patients suspected of having bladder cancer, blood urea nitrogen and creatinine levels should be obtained. In cases where metastatic disease is suspected, a full blood count and comprehensive metabolic panel, including alkaline phosphatase levels and liver function assessment, are appropriate. Estimated glomerular filtration rate (eGFR): A low eGFR has been found to be associated with a significantly increased risk of developing kidney and urinary tract cancer.

Table 4: Assessment outcomes biochemical hormone in bladder cancer patients

Variable	Mean	Sd
hemoglobin (g/L)	110	38
Lymphomonocyte (10^9/L)	0.98	0.95
Testosterone (ng/dL)	389	55
Urea (mg/Di)	39	25.9
Creatinine (mg/Di)	1.2	0.9
Na (mg/Di)	140	11.5
K (mg/Di)	4.7	3.8

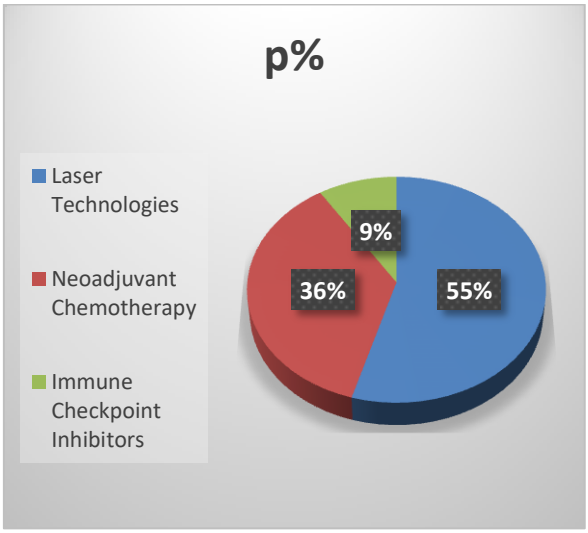

Fig 2: Distribution of patients according to treatment methods used in Iraq for 110 patients

Table 5: Final results on the quality of life of bladder cancer patients after treatment according to HRQoL

V	mean	Sd
Functional scales	80	3.9
Physical functioning	81	4.98
Emotional functioning	87	4.97
Cognitive functioning	79.9	3.21
Social functioning	85.9	4.96

Table 6: Rate the correlation serum parameters in the study population

V	R	Sig
Laser Technologies	+0.843**	<0.001
Neoadjuvant Chemotherapy	0.94**	<0.001
Immune Checkpoint Inhibitors	0.78	0.052
QOL	0.78	--

Table 7: Analysis of risk factors affecting bladder cancer patients in this study

Age	CIO	P-VALUE
Age	1.3 (0.6-1.83)	0.383
hemoglobin (g/L)	1.83 (1.1-2.2)	0.059
Lymphomonocyte (10^9/L)	2.23 (1.856-2.93)	<0.001
Testosterone (ng/dL)	1.44 (0.93-1.73)	0.023

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QOL before treatment	2.8 (1.6-3.9)	<0.001
Pain	2.9 (1.7-3.8)	<0.001
Dyspnea	1.72 (1.1-2.5)	0.021

DISCUSSION

Bladder cancer is the ninth most prevalent cancer worldwide in terms of new diagnoses, with a total of 614,298 cases recorded in 2022 (Globocan data). Geographical disparities are evident, with a higher incidence of urinary tract tumours observed in Western Europe (including Spain) and North America compared to Asia and Eastern Europe.

In Iraq, bladder cancer ranks fifth among all new tumour diagnoses in 2023, with 17,364 cases recorded in men and 4,496 in women. However, it ranks eighth in terms of mortality, with 4,434 deaths occurring due to this cause during that year.

The predominant form of bladder cancer is known as transitional cell carcinoma, which originates in the cells that line the inner surface of the bladder. However, it can also manifest in other components of the urinary excretory system, including the ureters and urethra [Herman, J. M. *et al*., 2004; Albers, P. *et al*., 2002]. The predominant risk factor is tobacco use in its various forms. The presence of cancer-causing substances has been identified in the urine of e-cigarette users, though their role in bladder cancer remains to be fully elucidated. The second risk factor is occupational, accounting for approximately 10% of cases, and is linked to the presence of aromatic amines, polycyclic aromatic hydrocarbons, and chlorinated hydrocarbons [Mak, K. S. *et al*., 2016; Hashine, K. *et al*., 2008]. For some individuals diagnosed with bladder cancer, treatment options exist that can remove or destroy the cancer. Completion of treatment can be a stressful yet positive experience, although concerns regarding the potential for cancer recurrence are common and can be debilitating for patients. [Huddart, R. A. *et al*., 2017]

For some individuals, the cancer may never fully regress or recur in a different anatomical location. Some patients may undergo regular treatment with chemotherapy, immunotherapy, or other interventions to maintain disease control. Learning to cope with a persistent cancer diagnosis can be extremely challenging and taxing. [Henningsohn, L. *et al*., 2002]

The present study sought to assess the quality of life (QoL) of patients diagnosed with bladder cancer. To this end, the HRQoL questionnaire (see Table 5) was utilised. The analysis revealed that, between the time point prior to surgery and the initial visit following the intervention, the disparities in QoL were minimal. However, the longitudinal trajectory exhibited an enhancement in responses across the majority of domains. This improvement may be attributable to the fact that, as patients are no longer afflicted by the disease and do not exhibit symptoms of recurrence of blood in the urine during follow-up examinations, they experience an improvement in their emotional state, which exerts a positive influence on the results of the questionnaire. The dimension most affected from the outset, and which responds first to change is self-esteem and emotional state, where most patients, prior to the intervention, respond to questions 4 and 5 (Appendix 1) of this section with a maximum score, and as they observe the progression of their disease, this score diminishes. These outcomes are consistent with the study by Schmidt9, who conducted a prospective observational study of quality of life in patients with bladder cancer, in which he documented these results in the section on patients' mental health.

CONCLUSION

In medicine, the prognosis of bladder cancer is estimated using statistical data collected over many years of studying people with the disease. The statistic most commonly used to explain prognosis is the relative survival rate or 2-year survival rate. The relative survival rate is the percentage (proportion) of people with the same type and stage of bladder cancer who are alive after their initial diagnosis compared to people in the general population. For example, the quality-of-life improvement for localized bladder cancer is 71%. This means that people diagnosed with localized bladder cancer have a 71% improvement compared to before treatment.

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Source of support: Nil;
Conflict of interest: Nil.

Cite this article as:
Alkuraiti, A.B.M. Hasan, A.A. and Jasim, M.H. "Quality of Life of Iraqi Patients Suffering from Bladder Cancer." *Sarcouncil Journal of Medical Series* 4.2 (2025): pp 3-10.

Publisher: SARC Publisher