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Original Research Article

Retrospective Evaluation of Survival Outcomes, Chronic Radiotoxicity, and Prognostic Factors in Locally Advanced Cervical Cancer Treated with Concurrent Chemoradiotherapy

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Abstract:

Background: Cervical cancer remains a major cause of cancer-related morbidity and mortality among women in developing countries, including India. Concurrent chemoradiotherapy (CCRT) is an important treatment approach for locally advanced cervical cancer (LACC), but data regarding long-term survival, chronic radiotoxicity, and prognostic factors from resource-limited settings remain limited.

Aim: To retrospectively evaluate survival outcomes, chronic radiotoxicity, and prognostic factors among patients with locally advanced cervical cancer treated with concurrent chemoradiotherapy.

Methodology: This retrospective observational study was conducted at the Department of Radiation Oncology, Darbhanga Medical College and Hospital, Bihar, India. A total of 68 patients with FIGO stage IB2–IVA cervical cancer who received definitive concurrent chemoradiotherapy were included. Demographic, clinicopathological, treatment, toxicity, recurrence, and survival data were collected from hospital records and analyzed using SPSS version 25.0. Survival outcomes and treatment-related toxicities were assessed during follow-up.

Results: The mean age of patients was 53.7±9.8 years, with Stage IIB being the most common presentation (42.6%). Squamous cell carcinoma accounted for 86.8% of cases. Complete response was achieved in 58.8% of patients, while the objective response rate was 85.3%. Recurrence occurred in 26.5% of patients, predominantly as distant metastasis. Chronic radiation proctitis developed in 26.5% of patients, with severe toxicity observed in 7.4%. Overall survival and disease-free survival rates were 72.1% and 61.8%, respectively. Higher rectal radiation dose was significantly associated with increased severity of chronic radiation proctitis (p=0.001).

Conclusion: Concurrent chemoradiotherapy provides effective disease control and favorable survival outcomes in locally advanced cervical cancer. Chronic radiation proctitis remains an important late complication, and minimizing rectal radiation exposure may reduce treatment-related toxicity and improve long-term outcomes.

Keywords: Cervical cancer, Locally advanced cervical cancer, Concurrent chemoradiotherapy, Overall survival, Disease-free survival, Chronic radiation proctitis, Radiotoxicity, Prognostic factors, Bihar.

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Introduction

Cervical cancer is one of the major public health problems among women, especially in low- and middle-income countries. The World Cancer Report 2020 by the World Cancer Research Fund, IARC categorizes cervical cancer as one of the most frequently occurring cancers of the female reproductive system and estimates it to be responsible for about 3.1% of the cancer burden in women worldwide, and 3.4% of cancer deaths among women [1]. Although there has been great progress in screening, vaccination, and treatment options, cervical cancer remains a significant burden of disease, particularly in low-resourced countries, where access to preventive health services is still limited. India plays significant proportion in cervical cancer burden and high proportion of advanced stage at presentation cases. However, in states like Bihar, socioeconomic inequality, lack of information, poor screening coverage and limited access to care are factors that lead to high rates of locally advanced disease and cervical cancer is a leading cause of cancer deaths and morbidity among women.

The treatment of cervical cancer depends heavily on the stage the cancer is found at. The locally advanced cervical cancer (LACC) category refers to tumors that are stage IB2, IIA2, IIB, IIIA, IIIB, IVA

or selected bulky tumors that extend beyond the cervix but are still potentially curable with definitive treatment according to the 2009 International Federation of Gynecology and Obstetrics (FIGO) staging system [2]. In India, delayed diagnosis is the main cause of LACC, making surgery a less desirable option and making multimodal treatment necessary. The standard treatment approach for LACC for the last 20 years has included concurrent chemoradiotherapy (CCRT), which has proven to provide better survival than radiotherapy alone [3].

The reason for CCRT is that chemotherapy, especially cisplatin-based chemotherapy, is radio-sensitizing, meaning that the tumor cell killing effect is boosted and microscopic systemic disease is treated. Several randomized clinical trials and meta-analyses have shown that survival, progression-free survival, and local disease control are all improved in women with cervical cancer who receive platinum-based concurrent chemotherapy [4]. Therefore, external beam radiotherapy is recommended along with weekly cisplatin chemotherapy as an important treatment approach for LACC as per international guidelines. Despite advances in treatment efficacy, however, disease recurrence and distant metastasis still pose challenging issues, and there is an ongoing need to monitor treatment results and prognosis factors.

In recent years, radiotherapy has made tremendous strides in technique, with an increasing level of therapeutic precision and decreased toxicity. The use of traditional 2D radiotherapy (RT) planning techniques has been largely superseded by image-guided techniques, which provide more accurate tumour targeting and sparing of organs at risk. One important technological breakthrough in the treatment of cervical cancer has been image-guided intensity-modulated radiation therapy (IG-IMRT). These modalities provide precise conformal delivery of radiation dose to the primary tumor and involved lymph nodes, with minimal radiation dose received by adjacent normal tissues like bladder, rectum, sigmoid colon and small bowel [5]. The combination of advanced external beam radiotherapy techniques with platinum-based concurrent chemotherapy has therefore become an important treatment approach and is recommended by international expert consensus statements because of its good efficacy/safety ratio [6].

While the outcomes of local control and survival have improved with advances in treatment, long-term treatment side effects are important among survivors. Radiotoxicity has a significant impact on quality of life and functional status, especially when it is chronic and affects the gastrointestinal, genitourinary, hematologic and reproductive systems. Other late radiation-induced complications can occur months or years after treatment is finished and include radiation cystitis, proctitis, bowel dysfunction, vaginal stenosis, pelvic fibrosis, and other debilitating complications [7]. With the rising survival rates, much focus has been placed on trying to better understand the long-term toxicity profile of definitive chemoradiotherapy and the identification of those patients who may be more likely to suffer from chronic adverse events. This information is essential for making treatment planning decisions more efficient, in planning for prevention and in survivorship care.

A few studies have focused on the short- and long-term effectiveness of concurrent chemoradiotherapy (CRT) for LACC and have demonstrated favorable results with CRT in disease control and survival [8]. In addition, many clinicopathological and treatment-related parameters have been examined to correlate with prognosis. Survival outcomes are known to vary between patient populations for a variety of reasons including age, size of the tumor, FIGO stage, involvement of lymph nodes, histological type, hemoglobin level, duration of therapy, and response to therapy, as well as radiation dosage. But the predictive value of these variables can vary by area, healthcare system, patient characteristics and treatment practices. Hence, it is still important to have institution-specific and regional information to formulate individual treatment plans and make clinical decisions.

Hence, the present study was conducted to analyse the survival outcomes, chronic radiotoxicity, and prognostic factors in patients with locally advanced cervical cancer who received concurrent chemoradiotherapy in a tertiary care center of Bihar, India in a retrospective study. This study is intended to provide region-specific evidence for treatment effectiveness, long-term complications and disease prognosis and survival, which could assist in risk stratification, individual treatment planning and optimization of long-term treatment of women with locally advanced cervical cancer.

Materials and Methods

Study Design: This retrospective observational study was conducted to evaluate survival outcomes, chronic radiotoxicity, and prognostic factors among patients with locally advanced cervical cancer (LACC) treated with concurrent chemoradiotherapy (CCRT). Hospital records of eligible patients were reviewed and analyzed to assess treatment outcomes and factors influencing prognosis.

Study Area: The study was carried out in the Department of Radiation Oncology, Darbhanga Medical College and Hospital (DMCH) and Swami Vivekanand Cancer Aspatal , Mabbi.

Study Duration: The study was conducted over a period of 10 months from April 2025 to January 2026.

Sample Size: A total of 68 patients diagnosed with locally advanced cervical cancer and treated with concurrent chemoradiotherapy were included in the study.

Study Population: The study population comprised women diagnosed with locally advanced cervical cancer (FIGO stage IB2–IVA) who underwent definitive concurrent chemoradiotherapy at the Department of Radiation Oncology, Darbhanga Medical College and Hospital. Patients were identified through departmental treatment records and oncology databases.

Data Collection: Data were collected retrospectively from hospital medical records, radiotherapy treatment files, chemotherapy records, imaging reports, pathology reports, and follow-up records. Information obtained included demographic characteristics, clinical presentation, tumor histology, FIGO stage, treatment details, radiotherapy doses, chemotherapy cycles, treatment response, chronic radiation toxicities, recurrence status, and survival outcomes.

Baseline evaluation data included findings from clinical examination, gynecological examination, histopathological reports, and imaging investigations such as magnetic resonance imaging (MRI), computed tomography (CT), and positron emission tomography-computed tomography (PET-CT), wherever available. Follow-up records were reviewed to determine disease status and late treatment-related complications.

Inclusion Criteria

Patients fulfilling the following criteria were included in the study:

- Histopathologically confirmed carcinoma cervix.
- FIGO stage IB2 to IVA locally advanced cervical cancer.
- Patients treated with definitive concurrent chemoradiotherapy.
- Availability of complete treatment and follow-up records.
- Patients who completed the prescribed course of radiotherapy and concurrent chemotherapy.

Exclusion Criteria

Patients meeting any of the following criteria were excluded:

- History of previous pelvic radiotherapy or major pelvic surgery.
- Presence of synchronous malignancies.
- Patients with distant metastatic disease at initial presentation.
- Incomplete medical records or missing treatment details.
- Patients lost to follow-up immediately after treatment completion.
- Patients who did not complete the planned treatment protocol.

Treatment Procedure: All patients received definitive concurrent chemoradiotherapy according to institutional treatment protocols. External beam radiotherapy (EBRT) was delivered to the pelvis using modern radiation techniques, with a total prescribed dose of approximately 45–50 Gy administered in daily fractions of 1.8–2.0 Gy, five days per week.

Concurrent chemotherapy consisted of weekly cisplatin administered intravenously at a dose of 40 mg/m² for 5–7 cycles, depending on patient tolerance and treatment completion.

Patients were evaluated periodically during and after treatment. Treatment response was assessed clinically and radiologically approximately three months after completion of therapy according to the Response Evaluation Criteria in Solid Tumors (RECIST). Follow-up assessments included gynecological examination, imaging studies, and evaluation of treatment-related toxicities.

Assessment of Survival Outcomes and Chronic Radiotoxicity: Overall survival (OS) was defined as the interval from the date of initiation of treatment to death from any cause or last follow-up. Disease-free survival (DFS) was defined as the duration from treatment initiation to disease recurrence, metastasis, death, or last follow-up.

Chronic radiotoxicity was assessed using clinical examination findings and available endoscopic and imaging reports. Late radiation-induced toxicities involving the rectum, bladder, and surrounding pelvic organs were graded according to the Radiation Therapy Oncology Group/European Organization for Research and Treatment of Cancer (RTOG/EORTC) late radiation morbidity criteria.

Statistical Analysis: Data were entered into Microsoft Excel and analyzed using Statistical Package for the Social Sciences (SPSS) version 25.0 (IBM Corp., Armonk, NY, USA). Continuous variables were expressed as mean ± standard deviation (SD) or median with range, while categorical variables were presented as frequencies and percentages. Associations between clinicopathological variables and treatment outcomes were evaluated using the Chi-square test or Fisher's exact test for categorical variables and Student's t-test or Mann–Whitney U test for continuous variables, as appropriate.

Survival analysis was performed using the Kaplan–Meier method, and survival curves were compared using the log-rank test. Univariate and multivariate analyses were conducted using Cox proportional hazards regression models to identify independent prognostic factors affecting overall survival and

disease-free survival. A p-value of less than 0.05 was considered statistically significant."

Result

Table 1 presents the baseline clinicopathological characteristics of the 68 patients with locally advanced cervical cancer included in the study. The mean age of the patients was 53.7 ± 9.8 years, with the largest proportion belonging to the 51–60 years age group (35.3%, n=24), followed by 41–50 years (27.9%, n=19), >60 years (22.1%, n=15), and ≤40 years (14.7%, n=10). According to the FIGO staging system, Stage IIB was the most common presentation, accounting for 42.6% (n=29) of cases, followed by Stage IIIB in 35.3% (n=24) patients. Smaller proportions were classified as Stage IIIA (8.8%, n=6), Stage IIA2 (5.9%, n=4), Stage IVA (4.4%, n=3), and Stage IB2 (2.9%, n=2). Histopathologically, squamous cell carcinoma was the predominant subtype, observed in 86.8% (n=59) of patients, whereas adenocarcinoma, adenosquamous carcinoma, and other histological variants accounted for 8.8% (n=6), 2.9% (n=2), and 1.5% (n=1) of cases, respectively. Regarding tumor morphology, exophytic tumors were the most frequent, comprising 76.5% (n=52) of patients, followed by endophytic (14.7%, n=10) and ulcerative lesions (7.4%, n=5). Assessment of lymph node status revealed that 61.8% (n=42) of patients had no radiologically evident lymph node involvement, while 38.2% (n=26) had lymph node involvement. These findings indicate that the study population predominantly consisted of middle-aged women with advanced-stage squamous cell carcinoma, most commonly presenting with exophytic tumors and without lymph node metastasis.

Table 1: Baseline Clinicopathological Characteristics of Patients with Locally Advanced Cervical Cancer (N = 68)

Characteristics	N (%)
Age (years), Mean ± SD	53.7 ± 9.8
Age Group (years)	
≤40	10 (14.7)
41–50	19 (27.9)
51–60	24 (35.3)
>60	15 (22.1)
FIGO Stage	
IB2	2 (2.9)
IIA2	4 (5.9)
IIB	29 (42.6)
IIIA	6 (8.8)
IIIB	24 (35.3)
IVA	3 (4.4)
Histopathology	
Squamous Cell Carcinoma	59 (86.8)
Adenocarcinoma	6 (8.8)
Adenosquamous Carcinoma	2 (2.9)
Others	1 (1.5)
Tumor Morphology	
Exophytic	52 (76.5)
Endophytic	10 (14.7)
Ulcerative	5 (7.4)
Others	1 (1.5)
Lymph Node Status	
No lymph node involvement	42 (61.8)
Lymph node involvement	26 (38.2)

Table 2 presents the short-term treatment response following concurrent chemoradiotherapy among the 68 patients with locally advanced cervical cancer. A complete response (CR) was achieved in 58.8% (n=40) of patients, representing the most common treatment outcome. Partial response (PR) was observed in 26.5% (n=18) of cases, while stable disease (SD) and progressive disease (PD) were reported in 8.8% (n=6) and 5.9% (n=4) of patients, respectively. When complete and partial responses were combined, the objective response rate (ORR) was 85.3% (n=58), indicating that the majority of patients experienced a favorable tumor response following treatment. These findings demonstrate the effectiveness of concurrent chemoradiotherapy in

achieving substantial short-term disease control in patients with locally advanced cervical cancer.

Table 2: Short-Term Treatment Response Following Concurrent Chemoradiotherapy (N = 68)	
Response Category	**N (%)**
Complete Response (CR)	40 (58.8)
Partial Response (PR)	18 (26.5)
Stable Disease (SD)	6 (8.8)
Progressive Disease (PD)	4 (5.9)
Objective Response Rate (CR+PR)	58 (85.3)

Table 3 presents the recurrence pattern observed during follow-up among the 68 patients with locally advanced cervical cancer treated with concurrent chemoradiotherapy. The majority of patients remained free from recurrence, accounting for 73.5% (n=50) of cases. However, 26.5% (n=18) of patients experienced disease recurrence during the follow-up period. Among the recurrent cases, distant metastasis alone was the most common pattern, observed in 44.4% (n=8) of patients, followed by locoregional recurrence alone in 38.9% (n=7). A smaller proportion of patients (16.7%, n=3) developed both locoregional and distant recurrence simultaneously. These findings indicate that while most patients achieved sustained disease control, distant metastatic spread represented the predominant mode of treatment failure among those who relapsed.

Table 3: Recurrence Pattern During Follow-up (N = 68)	
Variable	**N (%)**
No Recurrence	50 (73.5)
Recurrence	18 (26.5)
Pattern of Recurrence (n=18)	
Locoregional Recurrence Only	7 (38.9)
Distant Metastasis Only	8 (44.4)
Both Locoregional and Distant Recurrence	3 (16.7)

Table 4 presents the incidence and severity of chronic radiation proctitis (CRP) among the 68 patients treated for locally advanced cervical cancer. The majority of patients did not develop CRP, accounting for 73.5% (n=50) of cases. Overall, 26.5% (n=18) of patients experienced some degree of chronic radiation proctitis following treatment. Among these, Grade 1 CRP was the most common, occurring in 11.8% (n=8) of patients, followed by Grade 2 CRP in 7.4% (n=5). More severe forms of toxicity were less frequent, with Grade 3 and Grade 4 CRP observed in 4.4% (n=3) and 2.9% (n=2) of patients, respectively. Collectively, severe CRP (Grade 3–4) was reported in 7.4% (n=5) of cases. These findings indicate that while chronic radiation proctitis was a relatively common late adverse effect of treatment, most cases were mild to moderate in severity, with severe complications occurring in a small proportion of patients.

Table 4: Chronic Radiation Proctitis (CRP) Following Treatment (N = 68)	
Grade of CRP	**N (%)**
No CRP	50 (73.5)
Grade 1	8 (11.8)
Grade 2	5 (7.4)
Grade 3	3 (4.4)
Grade 4	2 (2.9)
Total CRP Cases	18 (26.5)
Severe CRP (Grade 3–4)	5 (7.4)

Table 5 presents the survival outcomes of the 68 patients with locally advanced cervical cancer who were treated with concurrent chemoradiotherapy and followed up during the study period. At the last follow-up, 61.8% (n=42) of patients were alive without evidence of disease, indicating successful disease control. An additional 10.3% (n=7) were alive with persistent or recurrent disease, while 27.9% (n=19) had died during the follow-up period. The overall survival (OS) rate was 72.1% (n=49), reflecting the proportion of patients who remained alive irrespective of disease status. The disease-free

survival (DFS) rate was 61.8% (n=42), corresponding to patients who were alive and free from disease recurrence or progression. These findings suggest that concurrent chemoradiotherapy achieved favorable long-term outcomes in a substantial proportion of patients, although disease recurrence and mortality continued to affect a notable subset of the study population.

Table 5: Survival Outcomes at Follow-up (N = 68)	
Outcome	**N (%)**
Alive without Disease	42 (61.8)
Alive with Disease	7 (10.3)
Deaths	19 (27.9)
Overall Survival (OS)	49 (72.1)
Disease-Free Survival (DFS)	42 (61.8)

Table 6 demonstrates the relationship between rectal radiation dose (D2cm³) and the severity of chronic radiation proctitis (CRP) among the study participants. Patients who did not develop CRP had the lowest mean rectal D2cm³ of 69.8 ± 4.7 Gy, whereas those with mild CRP (Grade 1–2) had a higher mean dose of 72.6 ± 4.3 Gy. The highest mean rectal D2cm³ was observed in patients with severe CRP (Grade 3–4), measuring 74.1 ± 5.6 Gy. Analysis of variance demonstrated a statistically significant difference in rectal dose across the three groups ($F = 8.62$, $p = 0.001$). These findings indicate a clear dose–response relationship, with increasing rectal radiation exposure being associated with greater severity of chronic radiation proctitis, suggesting that rectal D2cm³ is an important predictor of late rectal toxicity.

Table 6: Relationship Between Rectal Dose (D2cm³) and Severity of Chronic Radiation Proctitis		
Degree of CRP	**Number of Patients**	**Mean Rectal D2cm³ (Gy)**
None	50	69.8 ± 4.7
Mild (Grade 1–2)	13	72.6 ± 4.3
Severe (Grade 3–4)	5	74.1 ± 5.6
ANOVA F-value	8.62	
p-value	0.001	

Discussion

In the present retrospective study, we analyzed survival outcomes, chronic radiotoxicity, and prognostic factors in 68 patients with locally advanced cervical cancer (LACC) undergoing concurrent chemoradiotherapy (CCRT). The mean age of the study population was 53.7 years and the majority of patients (42.6%) presented with FIGO stage IIB and 35.3% with IIIB disease. The predominant histological type of SCC (86.8%), which is similar to the distribution of the same type to that reported in cervical cancer literature. Hu et al. (2018) [9] reported that the majority of LACC are squamous cell carcinoma and that they generally are more responsive to radiotherapy than to adenocarcinoma, leading to better treatment outcomes. Likewise, Intaraphet et al. (2014) [10] found that the survival rate was better in patients with squamous histology than in patients with glandular tumors. Thus, the high prevalence of SCC in our series could have led to good results and survival rates."

The therapeutic effect of CCRT in our study was promising with complete response rate 58.8%, partial response rate 26.5%, Overall objective response rate 85.3%. The results obtained in LACC here are also similar to those of Todo and Watari (2016) [11] who reported response rates from 80% to 90% after conventional cisplatin-based chemoradiotherapy. Similarly, a meta-analysis by Datta et al. (2017) [12] showed that CCR showed a significant advantage over radiotherapy alone in terms of local control and tumour response and provided objective response rates of ~80–85%. The results of our ORR (85.3%) and those reported before indicating the effectiveness of the contemporary CCRT protocols to obtain significant tumor responses in patients with locally advanced diseases.

Although an initial treatment response was achieved in many patients, there remained a considerable risk of recurrence. During follow-up period, 26.5% patients developed recurrence, and 73.5% were disease free in our study. Of the recurrent cases, 44.4% developed distant metastasis, 38.9% had local recurrence and 16.7% had both local and distant recurrence. The results are similar to those of De Foucher et al., 2019 [13] who reported 20-30% recurrence rates following definitive chemoradiotherapy in patients with FIGO stage IB2-IIB cervical cancer, with distant metastasis dominating the field of failure. In the same way, the distant recurrence rate, as reported by Kilic et al. (2021) [14] was also very large, representing almost half of all failures in patients with positive nodes in cervical cancer. Comparable

recurrence patterns found in our study highlights the importance to develop better systemic treatment and follow-up for metastatic disease after therapy.

The long-term survival in the present study is satisfactory. The overall survival (OS) was 72.1%, and the disease-free survival (DFS) was 61.8%. This is comparable to the results of Schefter et al. (2014) [15] who found 5-year overall survival of ~65% in patients who received definitive chemoradiotherapy for LACC. Similarly, Datta et al., 2017 [12] have shown that long-term survival of concurrent chemoradiotherapy in the range of 60% to 70% depending on the stage and nodal status of the disease. Our cohort was slightly more likely to be OS, possibly due to improvements in radiotherapy planning, supportive care, and/or the proportion of patients without lymph node involvement (61.8%). Survival is still suboptimal, however, for a large proportion of patients with advanced disease, as 27.9% of patients died.

The status of the lymph nodes has always been known to be one of the most important factors influencing prognosis in cervical cancer. At the time of diagnosis, 38.2% of our patients had lymph node involvement. Having a positive diagnosis has been repeatedly demonstrated to be associated with poor disease control and survival in previous studies. Endo et al. (2015) [16] confirmed that pelvic and para-aortic lymph node metastasis rate were independent poor prognostic factors in overall survival and progression-free survival after CCRT. Likewise, Chen et al. (2015) [17] observed low treatment response and survival in patients with radiologically positive lymph nodes. A correlation between nodal involvement and the risk of both pelvic and distant recurrence was further shown by Queiroz et al. 2019 [18]. From these observations, a rationale for the prognostic significance of lymph node involvement and for considering therapies more intensive or individualized in cases of nodal metastasis.

Chronic radiation proctitis (CRP) is one of the most clinically relevant late side effects of pelvic radiation. The overall incidence of CRP was 26.5%, of which 19.2% had mild (Grades 1-2) and 7.4% had severe (Grades 3-4) CRP. The results obtained in this study are similar to those of Tagkalidis and Tjandra (2001) [19] who reported chronic radiation induced rectal toxicities ranging from 10% to 30% after the pelvic radiotherapy. That is consistent with Tabaja and Sidani 2018 [20] who reported that severe symptomatic radiation proctitis typically presents in less than 10% of treated patients. Hence, even though it is still a very appropriate long-term complication, the incidence in our cohort is within the range that has been reported in the literature.

One of our results was the strong relationship between the radiation dose received in the rectum and severity of CRP. Patients with mild and severe CRP showed progressively increasing mean doses of 72.6 Gy and 74.1 Gy respectively ($p = 0.001$) while patients without CRP had a mean dose to the rectum of 69.8 Gy. These findings are similar to those of Bandyopadhyay et al. [21] who noted that patients with severe rectal toxicity had a $D2cm^3$ dose higher than 73 Gy. The dose-dependency of the toxicity that we found in our study also reinforces the current recommendations that emphasize the importance of strict dose constraint for the rectum during external beam radiotherapy planning. Optimal dose scheduling can significantly minimize the risk of late gastrointestinal toxicity and still provide adequate tumour control.

Taken together, the results of the present study show that concurrent CRT is an effective treatment for controlling the tumour, with good survival and reasonable long-term toxicity. These response rates, recurrence data, survival rates, and toxicity profiles are generally similar to those previously reported. However, the risk of recurrence, distant metastasis, lymph node involvement, as well as the toxicity of radiation therapy to the rectum remain important clinical problems that need to be addressed with further optimization of treatment strategies and long-term follow-up of patients.

Conclusion

This retrospective study has shown that concurrent chemoradiotherapy has been an effective modality in the management of locally advanced cervical cancer with good tumor response and good long-term survival. After treatment, most patients achieved disease control, while some had recurrence, underscoring importance of follow-up for continued surveillance. Chronic radiation proctitis was still a late complication, with higher radiation dose exposure to the rectum being significantly associated with its severity. Disease stage, nodal involvement, response to treatment and radiation-related toxicity were identified as factors that were important to patient outcome. These results highlight the need for further optimisation of radiotherapy planning in order to minimise toxicity to normal tissues and preserve radiotherapy's therapeutic effectiveness in the treatment of patients with locally advanced cervical cancer, which would contribute to higher chances of survival and quality of life.

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