



# From Total Mesorectal Excision to Organ Preservation for the Treatment of Rectal Cancer

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The current standard treatment for rectal cancer is total mesorectal excision (TME) with or without neoadjuvant chemoradiotherapy (CRT) according to the patient's initial staging [1]. The National Comprehensive Cancer Network guidelines recommend excision without neoadjuvant CRT for the treatment of early rectal cancer (T1-2, N0), and neoadjuvant CRT followed by TME for the treatment of locally advanced rectal cancer [2]. A 54%–75% partial response and 8%–27% pathologically-complete response can be achieved through neoadjuvant CRT [3-5]. Rectal cancer response to CRT varies, but earlier stage tumors respond better than more advanced tumors. The degree of tumor downstaging after neoadjuvant CRT is associated with patient prognosis and disease-free survival (DFS) [6, 7].

In this issue, Kim et al. [8] reported the results of a 14-year experience at a large-volume single institution in which the oncologic outcomes in patients undergoing neoadjuvant CRT and TME for the treatment of locally advanced rectal cancer were evaluated. The pathologic complete response (pCR) rate (23.7%, 111 patients) in this study was within the ranges reported in previous studies. The 5-year DFS and overall survival (OS) of patients with pCR (ypT0N0) were 92.5% and 94.5%, respectively. The pathologic stage after neoadjuvant CRT was the most statistically significant independent predictor of OS and DFS in the multivariate analysis [8].

However, TME is associated with high morbidity rates and impaired functional outcomes. Tumor sterilization after neoadjuvant

CRT has led to a growing interest in alternative strategies for treating rectal cancer. Organ preservation, by use of observation (watch-and-wait) or local excision, is a new concept for patients with rectal cancer who received neoadjuvant CRT [9]. For patients with a complete or good clinical response, local excision or observation are both options [10].

The ACOSOG Z6041 trial reported successful organ preservation in patients with cT2N0 tumors treated by local excision after CRT with 5% local recurrence and 88% survival at 3 years [11]. The GRECCAR 2 trial reported the results of a randomized clinical trial comparing conventional TME with local excision in patients who responded well to CRT for the treatment of cT2-3N0-1 distal rectal cancer. Although this trial did not demonstrate the superiority of local excision over TME in terms of morbidity, long-term effects, or oncological outcomes, organ preservation was achieved in 46% of patients with acceptable 3-year local recurrence and DFS [12]. Stijns et al. [13] reported the results of a multicenter feasibility study that explored long-term oncological and functional outcomes of CRT followed by organ sparing local excision in patients who responded well to CRT for the treatment of distal rectal cancer in cT1-3N0. The actual 5-year local recurrence rate was 7.7%, with 5-year DFS and OS rates of 81.6% and 82.8%, respectively. Organ preservation was achieved in 64%, with acceptable health-related quality of life. However, major low anterior resection syndrome was experienced in 50% [13].

Until now, CRT followed by local excision in patients who respond well to CRT has been an oncologically-acceptable organ-preserving strategy for distal rectal cancer, especially for primarily resectable cancer, although local excision is associated with some morbidity and impairment of bowel function. After clinical complete response (cCR) or near cCR, the role of local excision remains controversial.

This was explored by Park et al. [14] in this issue, in which the results of a large volume retrospective study that evaluated the oncological outcomes of 2 types of organ-preserving approaches, observation (watch-and-wait) or local excision, for rectal cancer in patients who showed good clinical response after CRT are reported. Organ preservation was achieved in 94.6% (n = 70) of patients with favorable oncologic outcomes. The 5-year OS and DFS were

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93.3% and 69.8%, respectively, in the observation group, and 92% and 84.6%, respectively, in the local excision group. The rate of morbidity for local excision after CRT was found to be acceptable (23%), and the most common morbidity was anal pain (16%).

Among physicians treating rectal cancer, organ preservation is a field of active clinical research with many questions.

Although oncological outcomes appear to be similar between organ-preserving approaches and radical TME, the organ-preserving strategy has a risk of local recurrence and regrowth [15]. Therefore, the oncological safety of the organ-preserving approach is supported by the success of salvage treatment [16]. Evidence for the safety of an organ-preserving approach in patients with a clinical good response to CRT is increasing, and organ preservation has become an attractive alternative in select patients with rectal cancer.

## CONFLICT OF INTEREST

No potential conflicts of interest relevant to this article were reported.

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