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ABSTRACTS

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Expression of PTEN During Preoperative Radiotherapy Combined With Capecitabine Chemotherapy in Chinese Patients With Locally Advanced Rectal Cancer

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Objective: To evaluate the efficacy and safety of capecitabine combined with preoperative radiotherapy (RT) in Chinese patients with locally advanced rectal cancer (LARC) and observe the expression of phosphatase and tensin homolog (PTEN) in cancer tissue before and after neoadjuvant chemoradiotherapy (NCT).

Patients and Methods: Between June 2005 and June 2008, 66 patients with LARC were treated with capecitabine (825 mg/m² twice daily) and concurrent RT (50 Gy/25 fractions, 5 days per week). Patients underwent surgery after 6–8 weeks of combined therapy, followed by four cycles of adjuvant capecitabine (1,250 mg/m², twice daily on days 1–14, every 3 weeks). The primary end point was the rate of pathologic complete response (pCR). The expression of PTEN was detected before and after NCT.

Results: Sixty-one patients (92.4%) completed the NCT course as initially planned. The most severe hematologic adverse event was leukopenia, which occurred with grade 2 intensity in 13 (19.7%) patients and grade 3 in 3 (4.5%) patients. Grade 3 diarrhea and hand-foot syndrome (HFS) were observed in 3 (4.5%) and 2 (3.0%) patients, respectively. However, no grade 4

toxicity was observed. There were no treatment-related deaths during this study. Of the 64 patients treated with surgery, all had radial margins (R0 resections). Among the 32 patients with the primary tumor ≤ 5 cm from the anal verge, 20 (62.5%) underwent sphincter-preserving surgical resections. pCR was found in 10 patients (15.6%). PTEN mRNA expression in the cancer tissues after NCT was significantly higher than before NCT ($P = .008$). Meanwhile, the result of western blot demonstrated that PTEN protein expression in the cancer tissues after NCT was significantly higher than before NCT ($P = .027$).

Conclusions: Preoperative chemoradiotherapy with capecitabine and RT appears to be a safe, well-tolerated, and effective neoadjuvant treatment modality for LARC, which can also increase the PTEN expression level in cancer tissues and promote the apoptosis of cancer cell.