

# Impact of preoperative radiotherapy on survival in locally advanced rectal cancer: an observational population-based study from the South of Switzerland

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Preoperative radiotherapy (RT) followed by surgery is widely accepted in the treatment of locally advanced rectal cancer (LARC). This study aimed to estimate at the population-based level the impact of preoperative RT on overall survival (OS) and cancer-specific survival (CSS) in LARCs diagnosed in Southern Switzerland between 1996 and 2007. All patients with LARC were selected from the Ticino Cancer Registry database. Patients were categorized according to the first administered treatment: preoperative radiotherapy (RT) followed by surgery (RT+) versus surgery (RT-). Clinical-pathological characteristics and 5-year OS and CSS were analysed. Among 384 patients with LARC, 54% underwent preoperative RT, occurring more frequently in the mid-distal part of the rectum compared with the RT- group (74.8 vs. 29.8%, respectively). Both 5-year OS and CSS significantly improved in RT+ patients (OS: 68 vs. 54%, respectively; CSS: 71 vs. 63%, respectively). The adjusted hazard ratio for all death was equal to 0.66 (95% confidence interval: 0.46; 0.97); similarly, the hazard ratio for cancer-specific death was 0.63 (95% confidence interval: 0.39; 0.99). These

observational population-based results, after controlling for most important diagnostic and clinical prognostic factors, confirm the benefit of preoperative RT of LARC, even if the magnitude seems greater than expected in clinical trials results. Additional studies are needed, particularly with regard to the possible effect of standardized staging procedure and multidisciplinary discussion on patient outcome. *European Journal of Cancer Prevention* 21:139–146 © 2012 Wolters Kluwer Health | Lippincott Williams & Wilkins.

*European Journal of Cancer Prevention* 2012, 21:139–146

**Keywords:** Cancer Registry, locally advanced rectal cancers, preoperative radiotherapy, survival

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Received 25 May 2011 Accepted 16 July 2011