Does TNM 2010 Nodal Staging Provide a Better Prognostic Value than Lymph Node Density in Patients Underwent Radical Cystectomy with Standard Lymph Node Dissection

Introduction and Objectives: The TNM seventh edition (2010) for nodal staging in bladder cancer was based on the number and location of metastatic lymph nodes (in the true pelvis or in the common iliac region). Previous studies have demonstrated that lymph node density (LND) was superior to TNM nodal staging (TNM sixth edition, 2002) in predicting prognosis of node metastatic patients except those with small numbers of lymph nodes removed. With this study, we wanted to compare TNM 2010 nodal staging with LND on the prognostic value in a cystectomy population with standard lymph node dissection.
Material and Methods: From May 2002 to September 2011, a total of 265 consecutive patients with bladder urothelial cell carcinoma underwent radical cystectomy with pelvic lymph node dissection in our single center. The pelvic lymph node dissection was conducted in a standard template, including bilateral hypogastric, obturator, external iliac and commom iliac lymph nodes. All patients with positive lymph nodes were registered meticulously for LND and TNM 2010 nodal staging. Univariate and multivariate analysis for cancer-specific survival (CSS) and overall survival (OS) was performed by the Kaplan-Meier method with the long-rank test.
Results: There was 23.4% (62/265) of patients with pelvic lymph node metatstasis who were included in this study. The median of removed lymph nodes and LND was 11(2-24) and 0.33(0.07-1.00), respectively. On univariate analysis, TNM 2010 nodal staging and LND were both significant predictors of CSS and OS($P < 0.05$). However, on multivariate analysis, only TNM 2010 nodal staging (HR 2.35; $P < 0.05$) can predict the decreased CSS and OS.
Conclusion: The new TNM 2010 nodal staging was an independent predictor of CSS and OS in node metastatic patients, and was better than LND when small numbers of lymph nodes were removed.