Objective: To assess the predictive value of preoperative C-reactive protein (CRP) in patients undergoing radical cystectomy (RC) for invasive bladder cancer in light of recent data showing it to be an independent indicator of adverse oncological outcome in other malignancies.

Patients and Methods: A contemporary, consecutive cohort of 246 patients undergoing RC and bilateral pelvic lymphadenectomy for bladder cancer between 1999 and 2009. Elevated CRP was defined as >0.5 mg/dL and was consistent during study. The median follow-up was 30 months (6-116). Kaplan-Meier analysis was used to estimate cancer-specific survival (CSS) using log-rank test and Cox-regression analysis for multivariate analysis of risk factors. Based on regression estimates of significant parameters in multivariate analysis a new CRP-based scoring model was developed to predict cancer-specific survival (CSS). The predictive accuracy of the model was evaluated using the concordance index.

Results: The 3-year-CSS was 74.0% in patients with normal and 44.0% with elevated CRP (p<0.001). In multivariate analysis, CRP (p<0.001; used as a continuous variable), tumor stage (p=0.001), lymph-node density $\geq 0.09$ (p=0.02) and resection margin status (p=0.0001) were independent predictors of CSS. The 3-year-CSS in patients with a score 0-2, 3-6 and 7-10 was 80.5%, 44.9% and 7.1%, respectively (p<0.0001). Consideration of CRP in the final model increased its predictive accuracy by 4.9% with a concordance index of 0.788 (p=0.01).

Conclusions: This is the largest contemporary series to date indicating that preoperative CRP level is an independent risk factor for CSS. Therefore, CRP may be a useful parameter to include in predictive bladder cancer nomograms.