

Abstract

Abstract Introduction: Despite a rapid dissemination of robot-assisted radical prostatectomy (RARP) over open radical prostatectomy (ORP), to date no study has compared perioperative outcomes between the two approaches in patients with high-risk prostate cancer (PCa). The aim of our study was to evaluate the safety and feasibility of RARP in this setting. Patients and Methods: Overall, 1,512 patients with high-risk PCa within the Surveillance, Epidemiology, and End Results (SEER) Medicare-linked database diagnosed between 2008 and 2009 were abstracted. Patients were treated with RARP or ORP. Postoperative complications, blood transfusions, prolonged length of stay (pLOS), positive surgical margins, and additional cancer therapy rates were compared. Propensity-score matched analyses and logistic regression models fitted with generalized estimating equations for clustering among hospitals were performed. Results: Overall, 706 (46.7%) and 806 (53.3%) patients underwent ORP and RARP, respectively. Following propensity-matched analyses, 706 patients remained. No differences were observed in complications (P=0.6), positive surgical margins (P=0.4), or additional therapy after surgery (P=0.2) between patients treated with RARP and ORP; however, RARP was associated with lower rates of transfusions and shorter hospitalization (all P<0.001). In multivariable analyses, patients undergoing RARP were less likely to receive a blood transfusion (P=0.002) or to experience pLOS (P<0.001) compared with men treated with ORP. Conclusions: RARP and ORP have comparable complications, positive surgical margins, and additional cancer therapy rates in high-risk PCa. RARP is associated with lower rates of blood transfusions and shorter hospital stays. These findings suggest that RARP is safe and feasible even in this clinical scenario.

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