Robotic-assisted radical prostatectomy in young adults: Age-stratified oncological and functional outcomes

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Introduction & Objectives: There is a scarcity of information on the outcomes of robotic-assisted prostatectomy (RALP) in young men. To compare the age-stratified functional and oncological outcomes of RALP in men aged ≤55 years.

Materials & Methods: Among 10,997 patients in our RALP series, 2,243 were ≤55 years old. These men were divided into 3 age-stratified groups (Group 1: ≤45 years, Group 2: 46-50 years, Group 3: 51-55 years old). Age-stratified groups were compared for clinical, oncological, and trifecta outcomes. Kaplan-Meier curves and Cox regression models were used to identify survival estimations and their predictors.

Results: Overall, 33% and 22% of men had non-organ confined (≥pT3) and Gleason ≥4+3 prostate cancer at final pathology, respectively. Younger patients had a higher incidence of low-risk disease and better erectile function at presentation. Organ-confined and Gleason 3+3 cancer rates for men ≤45 and 51-55 years were 82% vs. 74% and 41% vs. 30%, respectively (p<0.05). Biochemical recurrence-free survival was similar among age-stratified groups. Bilateral full nerve-sparing (NS) rate was significantly higher in younger patients (74% in Group 1 vs. 56% in Group 3, p<0.001). One-year trifecta rates were 79.8%, 71.6%, and 63.9% regardless of baseline SHIM and NS for increasing age groups, respectively (p<0.001). Age, comorbidity score, and extent of NS were independent predictors of functional recovery. This study is limited by its retrospective design.

Conclusions: At RALP, one third of patients ≤55 years have locally advanced or high-risk prostate cancer. Age ≤45 years is associated with higher incidence of favorable tumor characteristics, which gives the surgeon increased ability to perform bilateral full NS, resulting in better functional recovery. Even in this young age group the influence of age is seen reflected by increase in the grade of disease and decrease in potency.