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INTRODUCTION & OBJECTIVES: Some reports suggested that nephron sparing surgery (NSS) may better protect against other-cause mortality (OCM) when compared with radical nephrectomy (RN) in patients with small renal masses. However, the majority of those studies could not adjust their results for potential selection bias secondary to clinical baseline characteristics of patients. In the current study, we aimed to test the effect of treatment type (NSS vs. RN) after accounting for clinical characteristics, comorbidities and individual cardiovascular risk.

MATERIAL & METHODS: A multi-institutional collaboration among four European Tertiary Care Centers allowed collecting 2685 patients with a clinical T1a-T1b N0 M0 renal mass. Patients underwent RN (n=1059, 39.4%) or NSS (n=1626, 60.6%) and showed normal estimated glomerular filtration rates (eGFR) before surgery (defined as a pre-operative eGFR \geq 60 milliliters per minute per 1.73 m²). Descriptive, univariable and multivariable Cox regression analyses were used to predict the risk of OCM. To adjust for inherent baseline differences among patients, we included as covariates: age, clinical tumor size, gender, presence of hypertension at diagnosis, baseline Charlson comorbidity index (CCI), body mass index and smoker status.

RESULTS: Mean follow up period was 76 months (median 61). Mean patient age resulted 60 years (median 62). Mean body mass index resulted 25 kg/m². Overall, 37.2% and 9.4% of the patients had hypertension or diabetes, respectively. CCI resulted 0-1 in 73.2% of the patients.

The 5- and 10-yr OCM rates after nephrectomy were 5.2% and 13.2% for NSS versus 7.4% and 15.1% for RN, respectively (p=0.3). At multivariable analyses, patients who underwent PN showed similar risk to die for OCM compared with their RN-treated counterparts (hazard ratio [HR]: 0.77; 95% confidence interval, 0.48-1.25; p=0.3). Increasing age (HR: 1.12, p<0.001), higher CCI (HR: 1.21, p=0.04) and smoker status (HR: 1.94, p=0.02) resulted independent predictors of OCM.

CONCLUSIONS: After correcting for clinical characteristics, comorbidities and cardiovascular risk at diagnosis, NSS does not decrease other-causes mortality relative to RN in patients with clinical T1a-T1b renal masses and a normal kidney function before surgery.