

# Margin Status after Partial Nephrectomy (PN) and its role in the Recurrence-free survival (RFS)



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## Introduction

Optimal management of patients with positive surgical margins (PSM) after PN is unclear. Clinical impact of PSM on recurrence/survival are less clear in the literature. We analyzed the impact of PSM status after PN on recurrence-free survival (RFS) and re-treatment-free survival (TFS)

## Materials and methods

We analyzed data on patient who underwent RAPN from 2012 and 2019. Two groups were created: positive (PSM) and negative surgical margin (NSM). Only malignant tumors were included. Risk factors for PSM were investigated in a multivariable logistic regression model. To compare the RFS and TFS, log-rank curves were generated. Cox regression was used to adjust potential confounders.

## Results

Totally 192 patients were analyzed, mean follow-up was 24 m. PSM rate was 10.4% (n=20). No differences between the groups were found in the following variables: age, gender, BMI, side, Charlson Comorbidity Index, RENAL score and preoperative eGFR. The median pre-op tumor size was higher in PSM group (42 vs. 30mm;  $p=0.006$ ), as well as the postoperative tumor size (36 vs. 30mm;  $p=0.002$ ). No differences were found in mean warm ischemia time (19 vs. 19min), operation time (138 vs. 122min), estimate blood loss (366 vs. 311ml) and postop stay (5 vs. 5 days);  $p=NS$  for all. Tumor distribution was similar among the groups with 65.7 vs. 65%, 18.6% vs. 20% and 11.6% vs. 15% [PSM – NSM] for clear cell, papillary and chromophobe tumors ( $p=NS$ ), respectively. Higher proportion of pT1b (25 vs. 17%) and pT3 (20 vs. 2.9%) were identified in PSM group ( $p=0.004$ ). In the multivariable LR, only tumor size predicted the PSM status (OR 1.04;  $p=0.022$ ). Five (25%) and six (3.4%) patients presented recurrence in PSM and NSM groups, respectively. The RFS was higher in NSM in the log-rank estimative ( $p<0.001$ ) and after adjusting variables as well (HR 7.2;  $p=0.004$ ). RFS was not affected by tumor size ( $p=NS$ ), pT1 subcategories ( $p=NS$ ) and FUHRMAN G1-2 vs. G3-4 ( $p=NS$ ). TFS was higher in NSM group (HR 5.6;  $p=0.016$ ).

## Conclusion

The PSM was associated with a lower RFS and TFS.

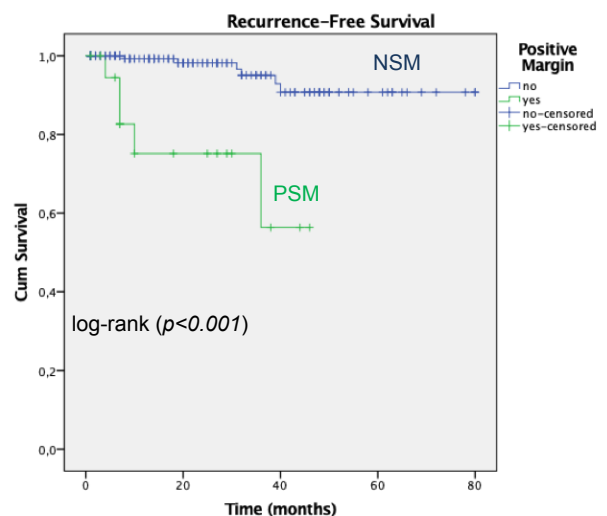


Fig 1: Kaplan-Meier curves of recurrence-free survival (RFS) for post-partial nephrectomy with PSM and NSM status