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Predictors of local recurrence after partial nephrectomy: Results from two-years follow up of a prospective multicentre study (RECORd 1 project)

Eur Urol Suppl 2017; 16(3);e1370

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INTRODUCTION & OBJECTIVES: The aim of the study was to analyse the mid-term oncologic outcomes after partial nephrectomy (PN) and to search for predictive factors of renal recurrence in a multicentre prospective observational study (RECORd 1 Project).

MATERIAL & METHODS: Overall, 1055 patients treated with PN for cortical renal tumors were prospectively recorded from 2009 to 2012 in Italian centres. A 24-months oncologic follow-up was recorded in 629 patients with a histologic diagnosis of Renal Cell Carcinoma (RCC). An observational analysis, a multivariable logistic regression analysis and Kaplan-Meier survival analyses for local recurrence were performed.

RESULTS: Patients had a ECOG performance status score >1 in 33.5% of cases. Surgical indication was relative and imperative in 15.9% and 6.2% of cases, respectively. Multiple omolateral and bilateral lesions were 4.1% and 0.6%. Renal tumors had a mean diameter of 3.2 cm (cT1a: 78.5%, cT1b: 18.9%, ct2: 2.5%), growth pattern was >50% and entirely endophytic in 22.6% and 2.7% of cases. Patients were treated with open, laparoscopic and robotic approaches in 52.8%, 34.2%, 13% of cases. A simple enucleation and standard PN were performed in 45.9% and 54.1%. ccRCC, pRCC, chRCC, unclassified RCC and others renal tumors were 70.6%, 15.3%, 10.3%, 1.1%, 2.7%, respectively. Nuclear Fuhrman grade (FG) was 1-2, 3-4 and undetermined in 70.8%, 16.5% and 12.7%. Extracapsular lesions (ECL) and positive surgical margins (SM) were registered in 5.6% and 5.4%. Median follow-up was 24.5 (IQR: 24.2-45.5) months. Renal recurrence was registered in 1.4% of cases (1 (0.2%) tumor resection bed and no contralateral recurrence were reported). Patients-related factors (gender, BMI, comorbidities), tumor-related features (size, location and growth pattern), histotype, FG and ECL were not significantly associated with renal recurrence at univariate analysis. At multivariable analysis imperative vs relative and elective surgical indication (OR 4.14, CI 1.63-12.21, p=0.01) and positive surgical margins (OR 7.17, CI 1.85-21.32, p=0.005) were confirmed as independent predictors of local recurrence. The overall 2-yr actuarial and 5-yr estimate local recurrence-free survival (l-RFS) was 0.967 (std. error .02) and 0.72 (std.

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error .72). Figures 1 shows Kaplan–Meier curves of l-RFS stratified for surgical indication and SM.

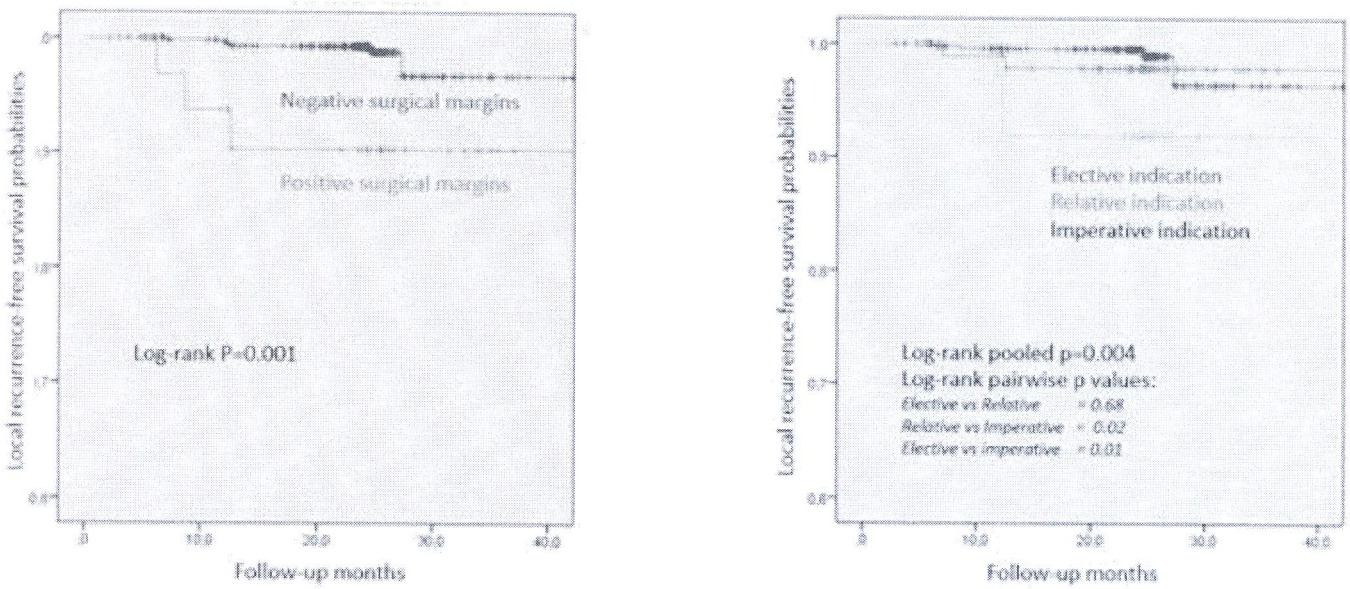

Figure 1. Kaplan-Meier local recurrence-free survival stratified for clinical and surgical variables

CONCLUSIONS: Patients submitted to PN for RCC had a 5-yr l-RFS of 72%. In our study, nephrometry tumor aspects, histotype, ECL and FG were not reliable prognostic factors for local recurrence. Patients with imperative indication and positive SM had a 4.14 and 7.17 fold risk to develop local recurrence.