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INTRODUCTION & OBJECTIVES: Although randomized prospective data demonstrated no benefit in performing lymph node dissection (LND) at the time of nephrectomy in cN0 disease, some retrospective studies support its use in certain clinical scenarios. Recent reports suggested underuse of LND in the United States, where today less than 20% of the patients undergo LND at the time of nephrectomy. We analysed European trends of LND utilization relying on a large Pan-European collaboration.

MATERIAL & METHODS: Using a multi-institutional database, including 15,341 patients with RCC who underwent radical or partial nephrectomy from 1985 to 2014, we analysed changes in LND rates over time according to clinical and pathological characteristics. Descriptive analyses, univariable and multivariable logistic regression analyses were used.

RESULTS: Overall, 6,907 patients (45.0%) with cN0 disease received a LND, with major disparities among different countries (range: 17.8-75.0%). Among LND cases, 697 (10.1%) showed lymph node invasion at final pathology. When performed, LND was most of the time not extended and templates were not standardized. LND was performed in 37.8 vs. 61.9 vs. 53.0 vs. 68.7% of T1 vs. T2 vs. T3 vs. T4 cases, respectively ($p < 0.0001$). At multivariable analyses, predictors of LND consisted of patient age (OR 0.98, 95%CI 0.97-0.99, $p < 0.0001$), type of surgery (partial vs. radical nephrectomy: OR 0.23, 95%CI 0.19-0.27, $p < 0.0001$), surgical approach (laparoscopic vs. open: OR 0.49, 95%CI 0.41-0.57, $p < 0.0001$; robotic vs. open: OR 0.44, 95%CI 0.21-0.91, $p = 0.02$), clinical size (OR 1.11, 95%CI 1.08-1.14, $p < 0.0001$), T stage ($p = 0.001$), and year of surgery (OR 0.96, 95%CI 0.95-0.97, $p < 0.0001$). Indeed, there was a gradual decline in LND beginning in the 1990ies that accelerated in 2008 after the publication of the EORTC trial showing no benefit in terms of survival for patients treated with LND. LND rates ranged between 32.0 and 56.2% from 1985 to 2008 vs. 23.4-30.1% after 2008 ($p < 0.0001$). This decline was also driven by stage migration to low stage diseases, use of minimally invasive surgery, and centers' disparities.

CONCLUSIONS: There has been a significant decline in LND rates for kidney cancer over the past years. LND is more frequently performed in younger patients, locally advanced diseases, and open surgery with significant disparities among centers. Although declining, unstandardized and limited in its extension, LND is still more frequently performed in Europe than in the United States.