Anatomical template for renal cell carcinoma lymph node dissection - what is the current evidence?
Augusto Quaresma Coelho¹, João Arthur Brunhara Alves Barbosa¹, Pedro Felipe Silva de Freitas¹, Sérgio Andurte Carvalho Duarte¹, William C Nahas¹, Miguel Srougi¹, Leonardo Lima Borges²

1. University of Sao Paulo School of Medicine – Division of Urology
2. Hospital Israelita Albert Einstein

Introduction and Objective
Although there is strong evidence that patients low risk renal cell carcinoma (RCC) do not benefit from lymphadenectomy (LDN), the role of this procedure in high risk patients remains controversial. In the setting of high-risk disease (i.e. T3-4, High Fuhrman nuclear grade 3-4, sarcomatoid features, coagulative necrosis), LND improves disease staging and may improve survival. However, there is still no consensus on the anatomical template for LND in such cases. **Objective:** To evaluate, in a systematic review, the current evidence regarding anatomical templates for LND in RCC

Methods
● We performed a review of the literature published in English on PubMed and Google Scholar databases from 1990 to 2019.

Key words selected were (“kidneyney”, “renal” and “lymph node dissection”, “lymphadenectomy” “lymphatic drainage”, “lymphatics”). After abstract evaluation, studies discussing anatomical templates for LND in RCC and lymphatic drainage of the kidney were included.

Results
● 18 studies were selected for proper review. Although Cadaveric dye dissection revealed most of what is known over renal lymphatic drainage, given the complexity of lymphovascular connections and frequency of supradiaphragmatic direct drainage, several in vivo and functional lymphatic studies have been proposed.

The functional evaluation with SPECT-CT shows that renal lymph node drainage has a high individual variability. Sentinel node studies suggest a direct pathway via thoracic duct to the lungs and mediastinum in up to 20% of RCC.

Retrospective data suggests that contralateral lymph node involvement is usually observed with metastases in other ipsilateral retroperitoneal lymph nodes. Several studies report that hilar nodes may underestimate metastatic disease beyond hilar region. There are no prospective randomized studies regarding an anatomical template in the literature reviewed.

Conclusions
● Although there is still no strong evidence to elect a single template in LND for RCC, there is evidence that dissection restricted to the ipsilateral hilar region could miss metastases to contralateral and distant nodes.

● In most of the studies LND was performed at surgeon’s discretion without standard anatomical templates. Therefore, we still lack randomized controlled trials with detailed standardized templates for LND in high risk RCC patients.

References