

Caio Vinicius Suartz¹, Natália Doratioto Serrano Faria Braz¹, Carlos Victoria Neto, Catharina Ribeiro Lyra², David Hamilton Cho¹, Mauricio Dener Cordeiro¹, José Mauricio Mota¹, William Carlos Nahas¹, Cristiano Mendes Gomes¹, Leopoldo Alves Ribeiro-Filho¹

¹ Division of Urology, Hospital das Clínicas, University of São Paulo Medical School, São Paulo, Brazil

² Universidade Federal da Bahia, Bahia, Brazil

Introdução e Objetivo

The preoperative nutritional status of patients with bladder cancer significantly influences surgical outcomes (1,2,3). However, there is a limited amount of literature investigating the Psoas Muscle Index (PMI). Currently, no studies in the field of urology have explored the utility of this index as a prognostic factor for cancer outcomes. Although some reports have demonstrated weak associations between the PMI and other well-established muscle-related indices (4,5), its potential as a predictor of surgical outcomes remains unclear. Therefore, the objective of this study was to examine the correlation between the PMI index and surgical outcomes in patients undergoing radical cystectomy for bladder cancer. Our hypothesis posits that patients with bladder cancer accompanied by a lower PMI (< 3 cm²/m²) would experience worse overall survival.

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Método

From January 2008 to July 2023, 623 patients were treated from bladder to radical cystectomy. This is a retrospective study through a review of medical records in a tertiary cancer center. Univariate, multivariate and Kaplan-Meier curves were used to confirm the predictability of the prognosis of MPI, which is defined as the ratio between the area of the psoas muscle at the level of the third lumbar vertebra (L3) and its height (figure 1). We evaluated the effect of PMI on risk on a survival analyses in a large cohort of consecutive patients who underwent radical cystectomy and bilateral pelvic lymphadenectomy

Figuras

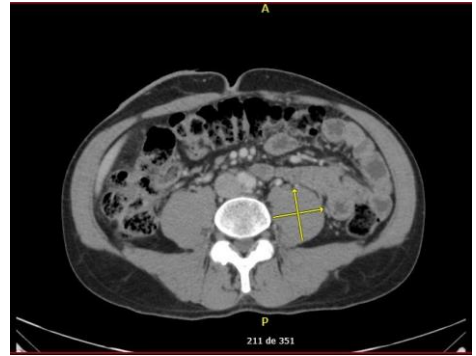
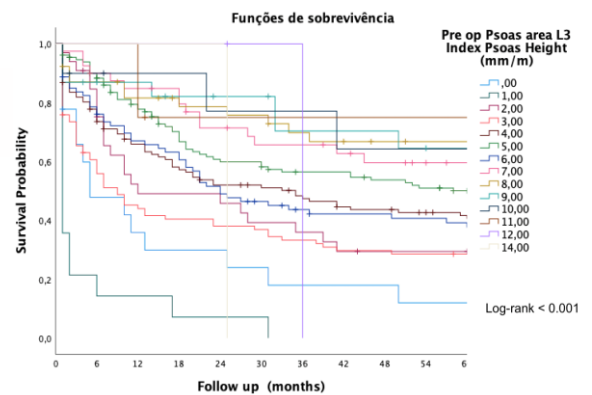


Figure 1: CT imagem showing psoas muscle area used to calculate the Psoas Muscle Index (PMI).



Graphic 1: Survival probability in bladder cancer patients according to pre operative Psoas Muscle Index (PMI).

Resultados

Of the total of 623 patients with a mean follow-up of 40.7 months, 338 (54.25%) had recurrence and 287 (46.06%) died associated with the neoplasm. The mean PMI was 4.67 in patients who had tumor relapse, while in those who did not recur it was 5.25 ($p < 0.001$). Patients with PMI 1 have 2.5 more times risk of death than other patients (HR:2.5; $p < 0.014$; 95%CI 1.2 - 5.2). On the Kaplan-Meier curve, the PMI score was associated with cancer-specific survival (CSS), recurrence-free survival (RFS) and overall survival (OS) and all with log rank test showing $P < 0.001$. The PMI demonstrates a greater association between oncological symptoms when compared to the cross-sectional area or density of the psoas muscle (graphic 1).

Conclusão

In patients undergoing radical cystectomy for bladder cancer, the PMI score can be a significant predictor of tumor recurrence, progression and mortality. The inclusion of the PMI score as a predictor may increase the accuracy of developing follow-up strategies and adjunctive therapies for patients with unfavorable PMI.

Referências

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