

CONUT score as a survival biomarker in MIBC

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Introduction

Host immunity plays an important role in cancer's progression. Current data supports improved responses of Muscle Invasive Bladder Cancer (MIBC) to PD-1 inhibitors. Nutritional condition has been identified as an independent predictor of survival in MIBC. The Controlling Nutritional Status (CONUT) score has been postulated as an indicator of Progression-free Survival (PFS) and Overall Survival (OS) in several cancers.

Objectives

The objective of the present study is to investigate CONUT score in MIBC patients undergoing radical cystectomy (RC) and its correlation with tumor recurrence and progression.

Methods

We retrospectively reviewed 126 patients from our prospectively maintained MIBC database. CONUT score was calculated based on serum albumin concentration, total lymphocyte count and total cholesterol concentration preoperatively (Table 1). The cut-off score for high and low-CONUT score was calculated with a ROC curve. Cancer-specific Survival (CSS) and PFS were analyzed for both groups.

Table 1. CONUT score

Parameter	Normal	Mild	Moderate	Severe
Serum albumin (g/dl)	≥ 3,50	3,00-3,49	2,50-2,99	< 2,50
Puntuacion	0	2	4	6
Total Lymphocyte Count (/mm ³)	≥ 1600	1200-1599	800-1199	< 800
Puntuacion	0	1	2	3
Total Cholesterol (mg/dl)	≥ 180	140-179	100-139	< 100
Puntuacion	0	1	2	3

Results

For CONUT score, the AUC was 0.7 (0.61-0.78) and the optimal cutoff value was 2.

50 patients (37%) were classified as high-CONUT (≥2) and 76 patients (56.3%) as low-CONUT (<2). The patients with high-CONUT presented with worse ASA score (72% ASA 3-4) and advanced disease at path report (88% pT3-4, 46% N1). Neoadjuvant chemotherapy was administered to 6 (12%) patients with high-CONUT, only 5 completed the 3 cycles. 38 patients (30%) were enrolled in the ERAS Prehabilitation protocol. Similar rates of major complications was observed (5-low; 5-high).

The patients with high-CONUT score had shorter 2-year PFS than the ones with low-CONUT scores (PFS 64% vs 78%; p<0.05). Multivariate analysis (Table 2) revealed that CONUT score is an independent predictor of bladder cancer specificity survival (HR 1.84; IC del 95% 1,01-3,39; p=0,048) (Fig. 2).

Table 2. Multivariate analysis of prognostic factors for CSS

Variable	HR	IC (95%)	p
CONUT ≥ 2	1,84	(1,01-3,37)	0,048
pN ≥ 1	2,17	(1,20-3,92)	0,01
pT ≥ 3	2,35	(0,69-7,99)	0,17
Age cistectomy	0,98	(0,94-1,02)	0,238
ASA	1,12	(0,67-1,85)	0,673

Fig. 1

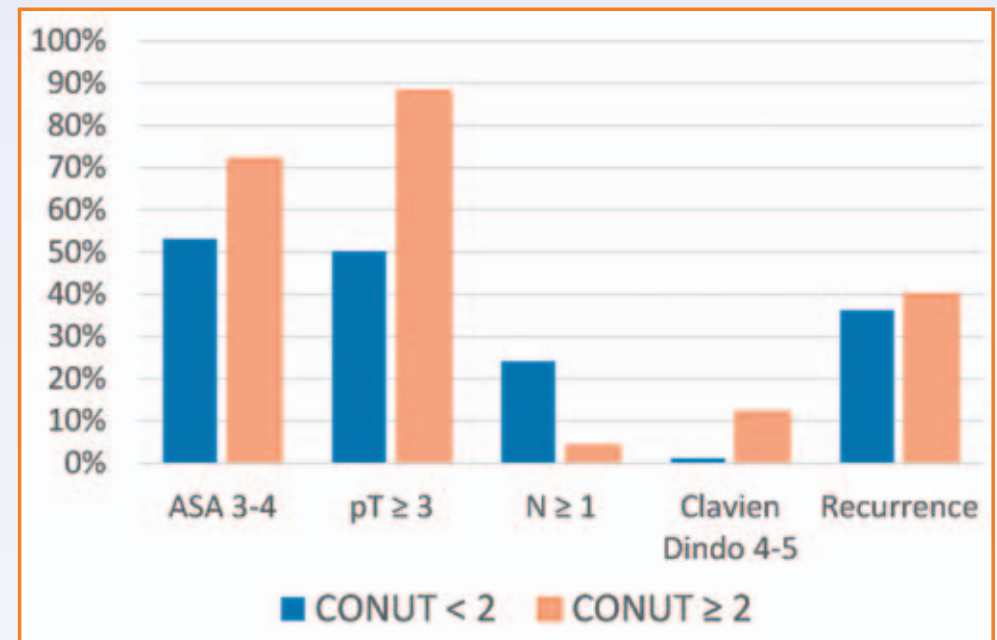
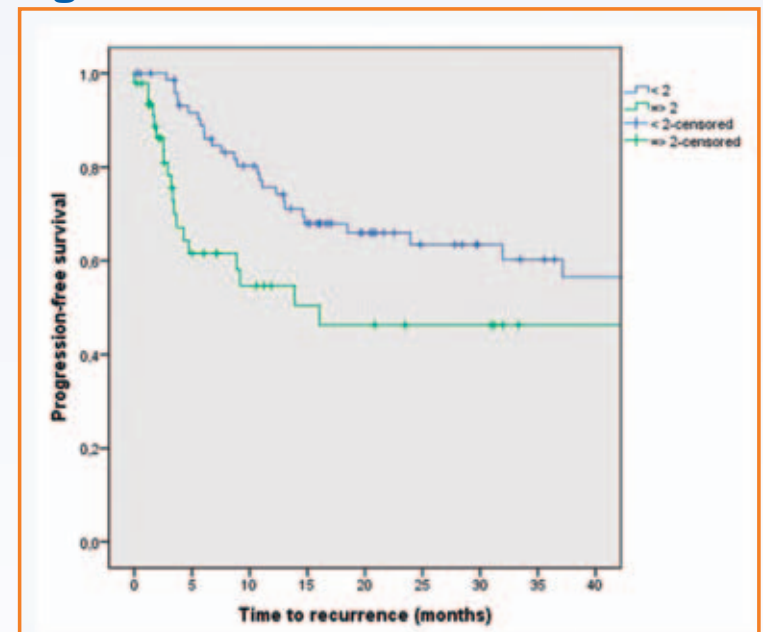


Fig. 2



Conclusion

Preoperative CONUT score in MIBC patients undergoing radical cystectomy should be taken into consideration to predict oncological outcomes. No differences were observed in terms of major complications in the ERAS subgroup. Further studies are required to validate the current findings.