MO423 **PROENKEPHALIN AS A BIOMARKER OF KIDNEY FILTRATION IN ACUTE KIDNEY INJURY**

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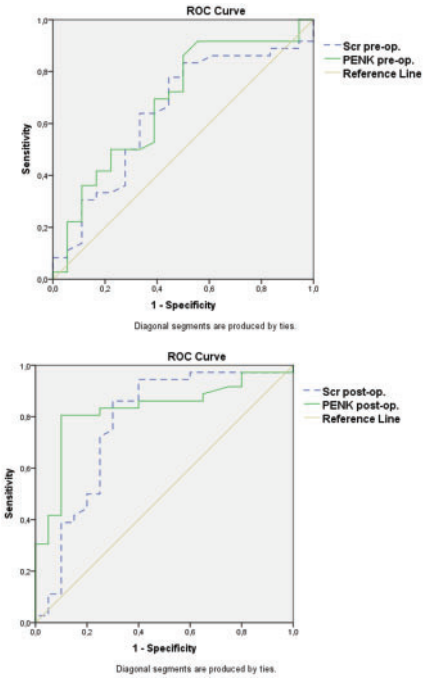
BACKGROUND AND AIMS: In the last decades, clinical research biomarker (BM) to improve assessment of kidney function have been intensive, and proenkephalin (PENK) has been identified as a new BM of filtration. We hypothesized whether PENK would have a better accuracy for the diagnosis of severe AKI than serum cystatin (CYS) and the serum creatinine (Scr). We evaluate patient in the peri op of liver transplant (LT).

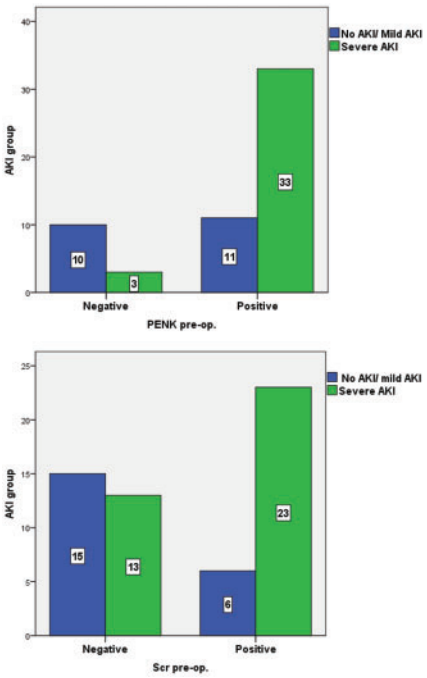
METHOD: Blood samples were collected during the pre and post (until 48 hours) operative (op.) period of LT in 57 eligible patients. Where was analyzed PENK (Sphingotest®), CYS (Milipex) and Scr (Quimioluminence). AKI diagnosis was based on the Kidney Disease International Global Outcomes (KDIGO) criteria using Scr. KDIGO 1 was subclassified according to the International Club of Ascites (ICA).

RESULTS: Of the 57 patients undergoing LT, 50 (88%) developed AKI according to the KDIGO criteria in the first week after LT. Twenty-one patients without AKI and with KDIGO 1-A (37%) were summarized as the no AKI/mild AKI group, whereas 36 patients with KDIGO 1-B, 2 and 3 (63%) were summarized as the severe AKI group. Before the intra - operative insult only PENK was significantly higher in patients that developed severe AKI, median 55 [P25-75(44,25 – 94,55)] in no AKI/mild AKI versus 90,16 [P25-75(64,70 – 135,76)] pmol/l in severe AKI p 0,021, an AUC 0,685 (CI 0,536 – 0,833), with a cutoff 55 pmol/l, sensibility of 0,86 and specificity 0,52, accuracy 0,75 to severe AKI. Scr levels in pre-op. were non- significantly higher in severe AKI; p=0,088. The CYS in the pre-op was similar within the groups. Pos-operative 48 hours after LT, PENK was significantly higher in severe AKI, median 81 [P25-75(61,25 – 101,50)] versus 161,45 [P25-75(122,85 – 294,03)] in severe AKI - p <0,0001 an AUC 0,83 (CI 0,72 - 0,94) with a cutoff 119,05 pmol/l, sensibility of 0,80 and specificity 0,90, accuracy 0,84 to severe AKI. Scr levels in post-op achieve an AUC 0,77 (CI 0,63 - 0,92) with a cutoff 1,49mg/dl, sensibility of 0,94, specificity 0,67 and accuracy 0,82. In a multivariate linear regression analysis adjusted for age, anestesia time, urine output and fluid balance, the PENK only was independently associated of severe AKI in pre-op. with OR 4,40 (CI 1,40 – 13,88) – p0,001 and the post-op. with OR 44,64 (CI 5,40 – 368,5) – p<0,0001.

CONCLUSION: PENK is a promisor filtration biomarker and showed a better acuracy to severe AKI in pre-operative than standard AKI diagnostic by Scr. Prediction of severe AKI in pre-operative period by PENK can help the management of these patients in the future.



MO423 Figure 1: Curve ROC AUC for Scr and PENK in pre and post- operative.



MO423 Figure 2: Bar chart severe AKI and the diagnostic by cutoff by Scr and PENK in pre-operative.