

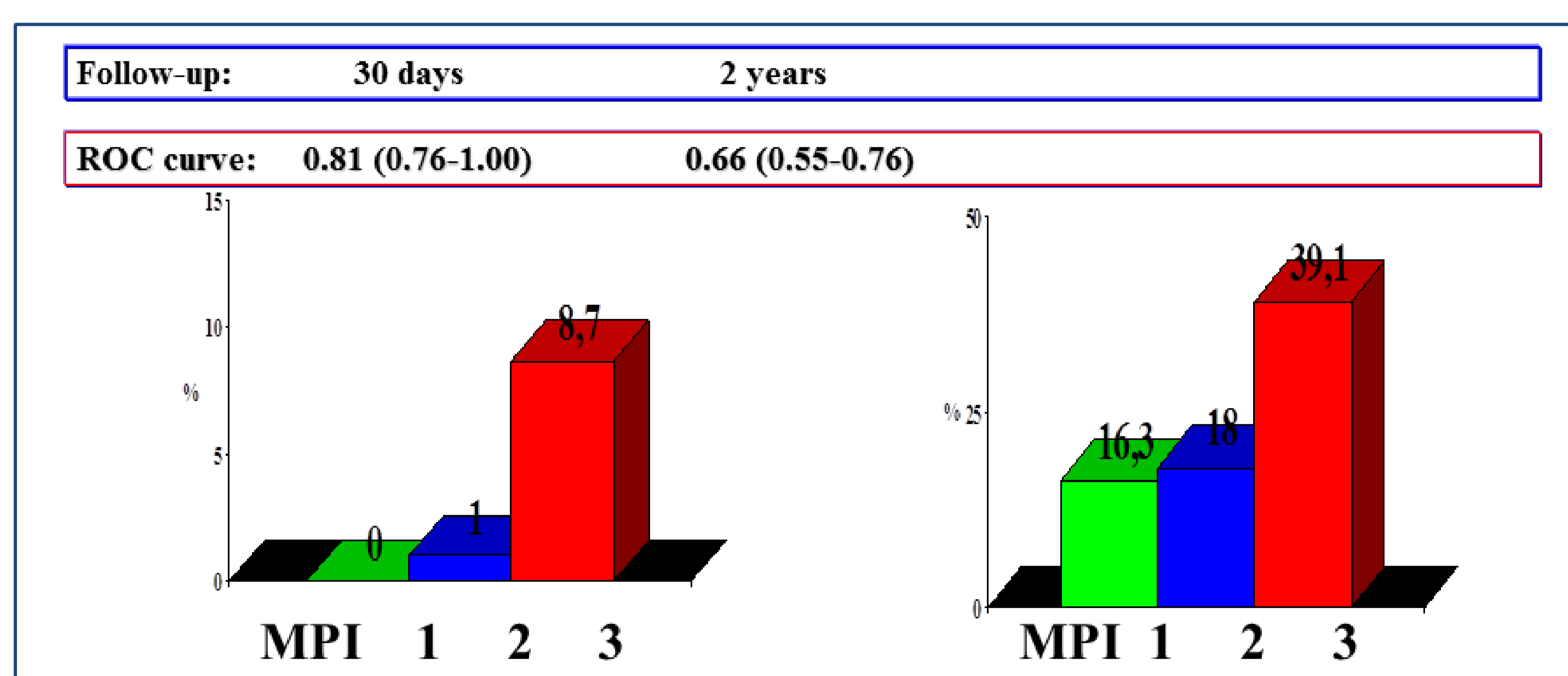
# The Multidimensional Prognostic Index (MPI) predicts short- and long-term mortality in older patients on haemodialysis

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**Background:** Recent study demonstrated that the Multidimensional Prognostic Index (MPI), a validated predictive instrument for mortality based on a standardized Comprehensive Geriatric Assessment (CGA), was a feasible tool that may identify older ESRD pts on haemodialysis at different risk of mortality. We evaluated the accuracy of the MPI in predicting short- and long-term mortality in older haemodialysis patients.

**Methods:** This is a multicenter study carried-out in 2 HD units in Italy. At baseline, all patients aged  $\geq 65$  years and older underwent a standardized CGA that included information on basal and instrumental activities of daily living (ADL, IADL), cognitive status (Short Portable Mental Status Questionnaire, SPMSQ) nutritional status (Mini Nutritional Assessment, MNA), the risk of pressure sores (Exton-Smith Scale, ESS), comorbidity (Cumulative Illness Rating Scale, CIRS), number of medications taken and co-habitation status (alone, institution, in family). These information were used to calculate the MPI, according to a previously validated algorithm, and the MPI was expressed as 0.0 to 1.0 value; for clinical purposes, moreover, a three-grade scale of risk was used according to validated cut-off values (MPI-1 0.0-0.33=low-risk; MPI-2 0.34-0.66=moderate risk; MPI-3 0.67-1.0=severe risk of mortality). All patients were followed for up two years and survival/mortality status recorded.

**Results:** 166 patients (mean age  $76,50 \pm 7,00$ ; range=65-96 years). 43 subjects (25,9%) were in MPI-1 grade, 100 subjects (60,2%) were in MPI-2 grade and 23 subjects (13,9%) were in MPI-3 grade group. Stratifying the study population in low/moderate-risk (MPI-1 and MPI-2 groups) and high-risk (MPI-3 grade group), a statistically significant difference was observed in mean values of ADL ( $5,11 \pm 1,35$  vs.  $1,30 \pm 0,80$   $p < 0,0001$ ),



IADL ( $5,33 \pm 2,60$  vs.  $1,13 \pm 0,81$ ,  $p < 0,0001$ ), MNA ( $21,75 \pm 4,01$  vs.  $14,90 \pm 4,00$ ,  $p < 0,0001$ ) and ESS ( $18,10 \pm 2,00$  vs.  $13,50 \pm 2,10$ ,  $p < 0,0001$ ) but not of CIRS ( $4,15 \pm 2,00$  vs.  $4,30 \pm 2,13$ ,  $p = 0,82$ ), SPMSQ ( $5,33 \pm 3,90$  vs.  $4,82 \pm 3,35$ ,  $p = 0,55$ ) and number of drug ( $5,75 \pm 2,91$  vs.  $6,20 \pm 3,70$ ,  $p = 0,49$ ).

IADL ( $5,33 \pm 2,60$  vs.  $1,13 \pm 0,81$ ,  $p < 0,0001$ ), MNA ( $21,75 \pm 4,01$  vs.  $14,90 \pm 4,00$ ,  $p < 0,0001$ ) and ESS ( $18,10 \pm 2,00$  vs.  $13,50 \pm 2,10$ ,  $p < 0,0001$ ) but not of CIRS ( $4,15 \pm 2,00$  vs.  $4,30 \pm 2,13$ ,  $p = 0,82$ ), SPMSQ ( $5,33 \pm 3,90$  vs.  $4,82 \pm 3,35$ ,  $p = 0,55$ ) and number of drugs ( $5,75 \pm 2,91$  vs.  $6,20 \pm 3,70$ ,  $p = 0,49$ ). Mortality rates were significantly different between patients with MPI-3 grade vs. MPI-1 and MPI-2 grades both at 1 month (8,6% vs. 0,7%  $p = 0,008$ ) and at two years (39,1% vs. 17,5%  $p = 0,017$ ) of follow-up. Receiver Operating Characteristics (ROC) curves were 0,77 (95%CI 0,47-1,0) and 0,64 (05%CI 0,51-0,76) at 1 month and 2 years of follow-up, respectively.

**Conclusions:** The CGA-based MPI showed good accuracy to predict short- and long-term mortality in older ESRD patients on haemodialysis.

