SIMPLE ASSESSMENT OF DEAMBULATION ABILITY HOLDS STRONG AND INDEPENDENT PROGNOSTIC POWER OVER AND ABOVE CLASSICAL AND ESRD RISK FACTORS AND BACKGROUND CARDIOVASCULAR COMORBIDITIES IN DIALYSIS PATIENTS

EXCITE Working Group and CNR-IFC Clinical Epidemiology of Renal Diseases and Hypertension Unit, Reggio Cal. Italy

INTRODUCTION

In a previous study we found that deambulation as categorized "independent deambulation", "assisted deambulation" or total inability to deambulate (bedridden or wheel-chaired) captures as much as the 13% of the explained variability in the risk of death in dialysis patients (Kidney Blood Pressure Res 2014;39:205-211). Since information about ambulatory ability is not applied for risk stratification nor it is included in current death-risk calculators in the dialysis population, we have explored into detail the prognostic power of deambulation (as defined above) in the whole cohort of patients who were evaluated for eligibility into a physical exercise program (the EXCITE study) in 11 Nephrology units in Italy which were representative of the Italian dialysis population. From a source population of 714 dialysis patients, 88 were excluded from the analysis because of the lack of information on deambulation or on survival time. Thus, the present analysis included 626 dialysis patients (i.e. 88% of the original study population).

METHODS

Patients in this cohort (n=626) had an mean age of 67±14 years (63% males; 24% diabetics) and had been on dialysis for a median time of 3.7 years (inter-quartile range: 1.8-6.5 years). Deambulation was assessed at baseline. Mortality data were collected over a median follow-up of 3.4 years (inter-quartile range: 0.09-4.11 years). Survival analysis was performed by 1) standard Cox regression analysis and 2) by appropriate methods testing the predictive value of prognostic factors i.e. Harrell' C index (a measure of discrimination), Hosmer-Lemeshow Test (a measure of calibration), Net Reclassification Index (NRI) (a measure of risk reclassification) and explained variation in mortality (an index combining discrimination and calibration).

RESULTS

Four-hundred and sixty-five patients (75%) had no deambulation impairment, ninety-seven (15%) deambulated only if assisted and sixty (10%) were bedridden/wheel chaired. During the follow-up, 228 patients died (13 deaths/100 person-years). On univariate COX regression analysis, the hazard ratio (HR) of mortality increased in close parallelism with deambulation impairment, being lowest in patients with no deambulation impairment (HR: 1, reference group), intermediate in those who needed of assistance during deambulation (HR: 2.73, 95% CI: 2.00-3.73) and highest in bedridden/wheelchaired patients (HR: 3.32, 95% CI: 2.33-4.72) (P for trend<0.001). The deambulation-mortality link held true in a multivariate Cox regression model adjusting for Framingham risk factors, background CV comorbidities, and ESRD-related (Hb, albumin, phosphate, CRP and dialysis vintage) risk factors (assisted deambulation, HR: 1.82, 95% CI 1.29-2.57; bedridden/wheelchaired, HR: 2.82, 95% CI 1.92-4.16, P for trend<0.001). To assess the additional prognostic value of deambulation impairment for predicting death, beyond and above standard risk factors, we constructed two risk prediction scores: one based on Framingham risk factors, background CV comorbidities, and ESRD - related risk factors (reduced model) and one based on these risk factors plus deambulation ability (extended model). The reduced model had a 69% discriminatory power for predicting mortality. Deambulation ability increased the discriminatory power of the model from 69% to 71% and such an increase was accompanied by a marked improvement in data fitting (P<0.001) (**Fig.1**). Furthermore deambulation ability produced a concomitant improvement in model calibration (+36%), increased the explained variation in mortality from 27% to 33% (P<0.001) (**Fig.2**) and substantially improved (+19%) the reclassification ability of the model (P<0.001).

Prognostic value of deambulation impairment

Fig.1

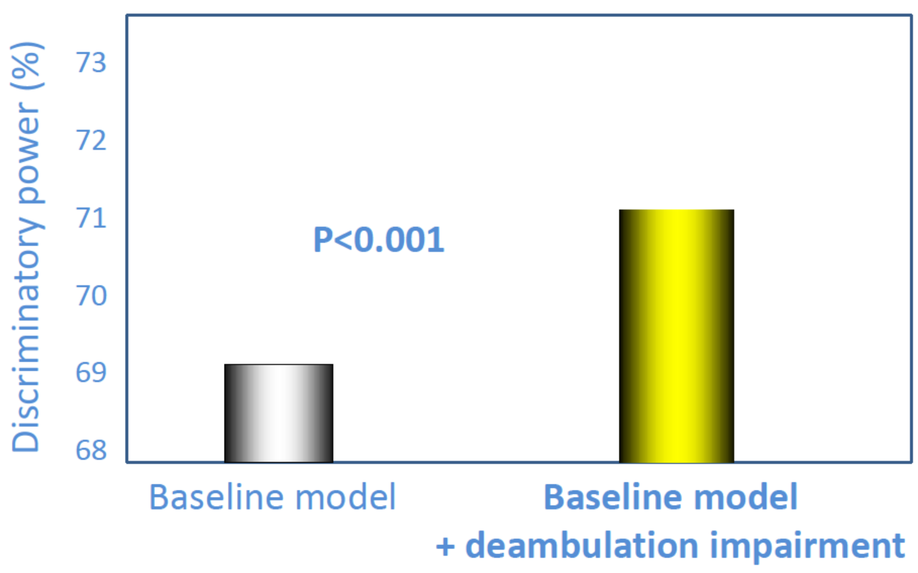
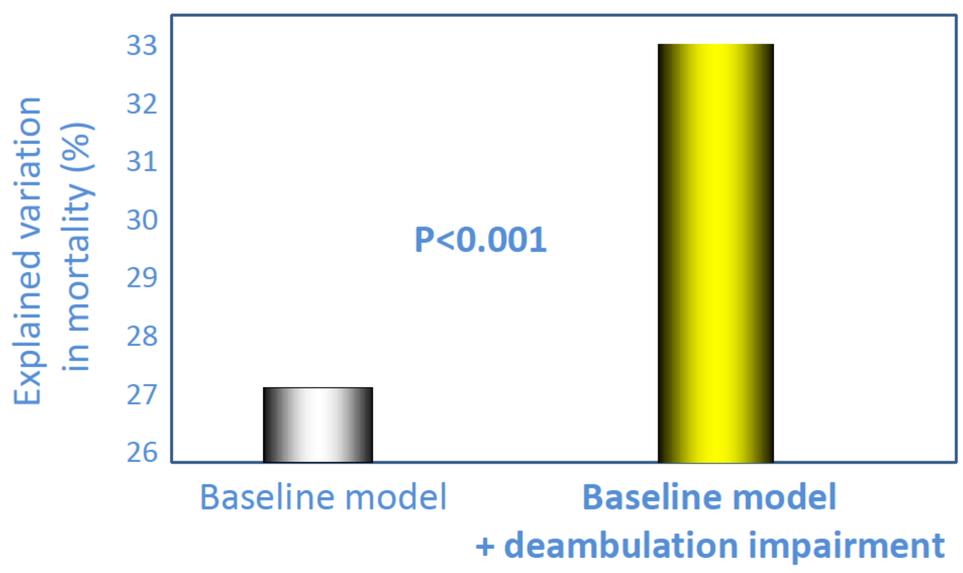


Fig.2



CONCLUSIONS

Very simple assessment of deambulation ability holds substantial prognostic power in the dialysis population and adds meaningful prognostic ability over and above background cardiovascular comorbidities, classical risk factors and risk factors peculiar to ESRD. Considering deambulation may improve risk stratification in the dialysis population and may refine the prognostic power of death risk calculators in this population.

52 ERA
703--FP
L7) Dialysis. Epidemiology, outcome research, health services research.
Giovanni Tripepi
DOI: 10.3252/pso.eu.52era.2015
ePosters supported by F. Hoffmann- La Roche Ltd.
52 ERA EDTA CONGRESS London 2015
PosterSessionOnline.com