

中文題目：急性腎損傷病人在透析起初有較高的血漿 cFGF-23 預測較高的死亡率與較不易脫離透析--競爭風險存活分析

英文題目：Higher Plasma cFGF-23 Levels in Patients with Acute Kidney Injury at Dialysis Initiation Predict high Mortality and less Weaning from Dialysis among Survivors, a Competing risk Analysis

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**Background:** Fibroblast growth factor-23 (FGF-23) has been associated with dialysis need and increased mortality risk in patients with acute kidney injury. It is also a well-known biomarker of impaired mineral metabolism. However, research in outcome prediction of FGF-23 at initiation of acute dialysis are still inconclusive.

**Material and Methods:** 257 intensive care unit (ICU) patients with AKI undergoing dialysis immediately after admission were prospectively included. At the initiation of dialysis, a variety of disease severity scores were calculated and blood and urine samples taken for biomarker measurement. Free from dialysis and 90-day all cause mortality after discharge were documented. Areas under the receiver operator characteristic curve (AUC-ROC) and a multivariate generalized additive model (GAM) were applied to predict outcomes.

**Results:** 135 (70.4%) patients died within 90 days after hospital discharge. Plasma cFGF-23 (c-terminal FGF-23, AUC, 0.687) had the best discriminative ability as compared with iFGF-23 (intact FGF-23, AUC, 0.504), creatinine adjusted urine neutrophil gelatinase-associated lipocalin (NGAL; AUC, 0.599) and disease severity scores for those who with and without 90-day mortality. Higher plasma cFGF-23 levels (> 2050 RU/mL) were independently associated with higher in-hospital (OR, 1.80, p= 0.049) and 90-day mortality (OR, 2.19, p=

0.011). Higher cFGF-23 levels predicted less weaning from dialysis in survivors (OR, 0.62,  $p = 0.032$ ). There is a significant increase in risk stratification after adding cFGF-23 to AKIN-AKI score to predict 90-day mortality. (total net reclassification improvement (NRI) = 0.27; 95% CI, 0.12-0.41;  $p = 0.017$ ).

**Conclusion:** In severely ill patients with AKI necessitating renal replacement therapy, plasma cFGF-23 levels are correlated with increased 90-days mortality and worse kidney recovery in survivors. Combining with the KDIGO-AKI score into prediction model, this biomarker significantly improves mortality risk prediction model.