Category : **Renal: failure**

A251 - *Personalization of renal replacement therapy initiation: a secondary analysis of the AKIKI and IDEAL-ICU trials*

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Introduction:
Trials comparing early and delayed strategies of renal replacement therapy (RRT) in patients with severe acute kidney injury may have missed differences in survival as a result of mixing together patients at heterogenous levels of risks.

Methods:
We relied on recent guidelines [1] to evaluate the heterogeneity of treatment effect on 60-day mortality from an early vs a delayed strategy across levels of risk for RRT initiation under a delayed strategy. We used data from the AKIKI, [2] and IDEAL-ICU [3] randomised controlled trials to develop a multivariable logistic regression model for RRT initiation within 48 hours after allocation to a delayed strategy. We then used an interaction with spline terms in a Cox model to estimate treatment effects across the predicted risks of RRT initiation.

Results:
We analysed data from 1,107 patients (619 and 488 in the AKIKI and IDEAL-ICU trial respectively). In the pooled sample, we found evidence for heterogenous treatment effects ($P = 0·023$). Patients at an intermediate-high risk of RRT initiation within 48 hours may have benefited from an early strategy (absolute risk difference, -14%; 95% CI, -27% to -1%). For other patients, we found no evidence of benefit from an early strategy of RRT initiation but a trend for harm (absolute risk difference, 8%; 95% CI, -5% to 21% in patients at intermediate-low risk).

Conclusion:
We have identified a clinically sound heterogeneity of treatment effect of an early vs a delayed strategy of RRT initiation that may reflect varying degrees of kidney demand-capacity mismatch.

References:
1. van Klaveren D, Varadhan R, Kent DM. The Predictive Approaches to Treatment effect Heterogeneity (PATH) Statement. *Ann Intern Med* 2020.
2. Gaudry S, Hajage D, Schortgen F, *et al*. Initiation Strategies for Renal-Replacement Therapy in the Intensive Care Unit. *N Engl J Med* 2016.
3. Barbar SD, Clere-Jehl R, Bourredjem A, *et al*. Timing of Renal-Replacement Therapy in Patients with Acute Kidney Injury and Sepsis. *N Engl J Med* 2018.

Image :
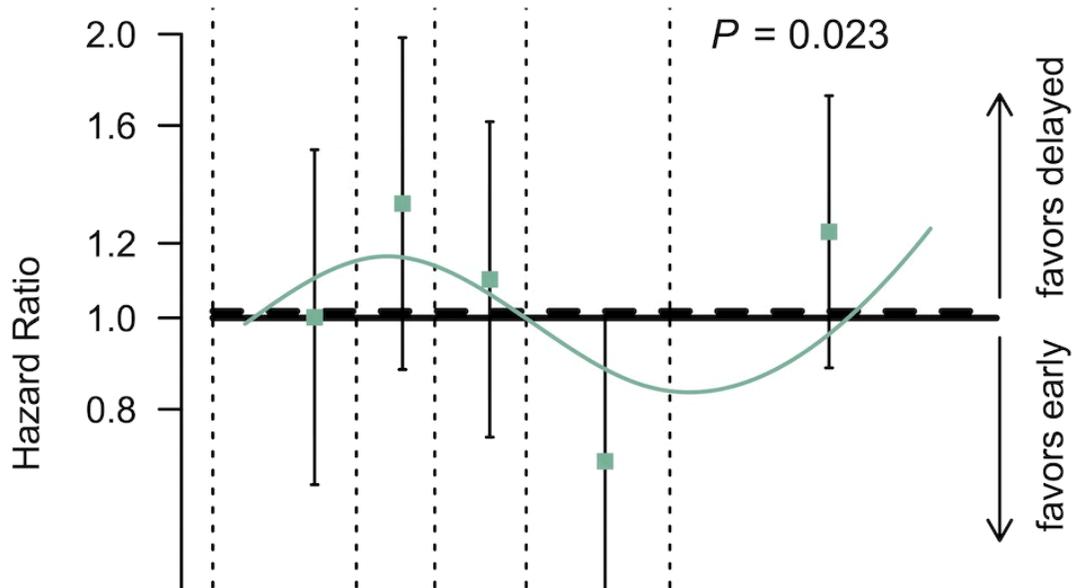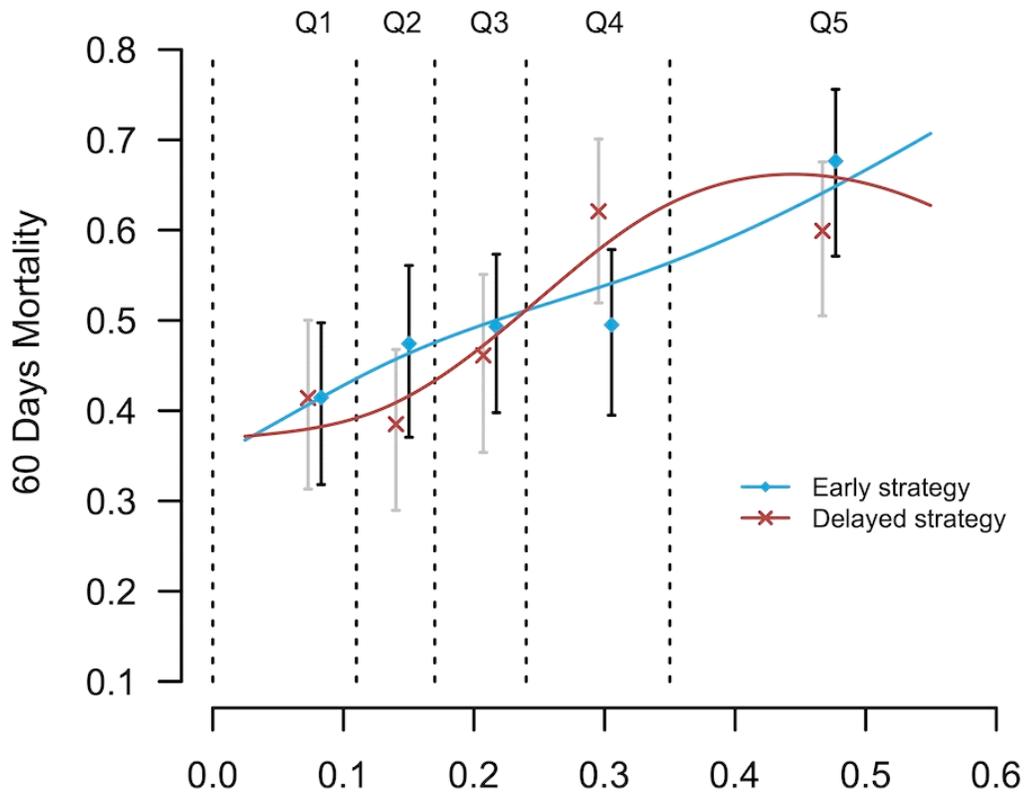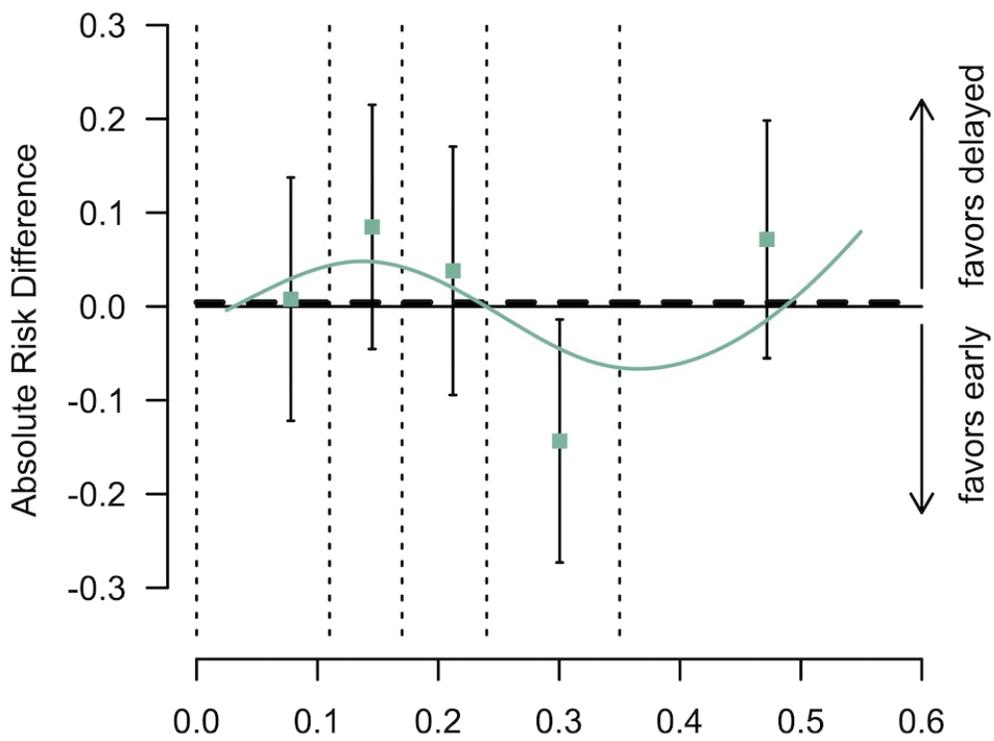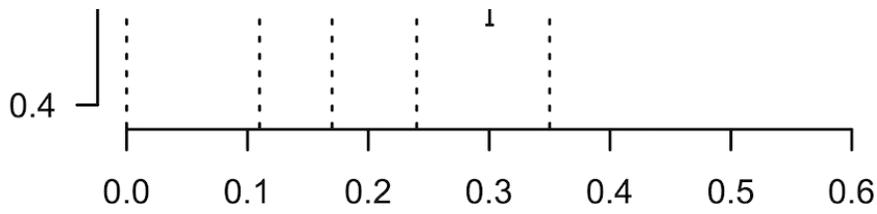
Heterogeneity of treatment effect (early vs delayed strategy) across different levels of risk of RRT initiation within 48 hours after allocation to a delayed strategy.