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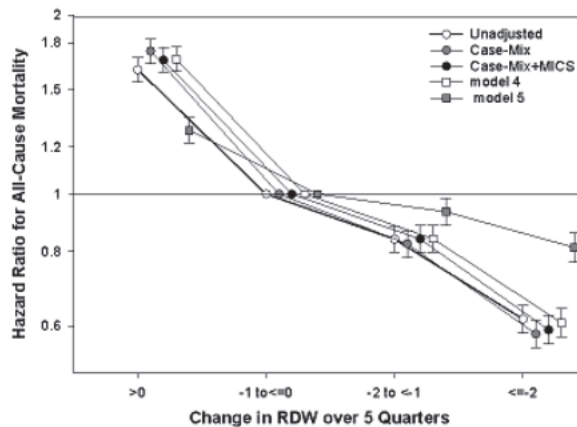
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FIRST YEAR CHANGE IN RED BLOOD CELL DISTRIBUTION WIDTH AND ITS ASSOCIATION WITH ALL-CAUSE MORTALITY IN HEMODIALYSIS PATIENTS:

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Red Blood Cell Distribution Width (RDW), a common and frequently recorded lab measurement that describes the homogeneity of erythrocyte size, has been associated with multiple comorbidities and poor health outcomes in numerous studies. Previous studies have shown that higher baseline RDW is associated with worse survival in both hemodialysis and peritoneal dialysis patients. We hypothesized that patients whose RDW increased over the first year of hemodialysis would have higher rates of mortality than those whose RDW decreased or stayed the same over time.

In a national cohort of 62,546 incident hemodialysis patients from a large dialysis organization, the association of change in RDW over the first dialysis year (5 quarters) with all-cause mortality was measured using Cox regression models adjusted for case-mix, comorbidities, markers of malnutrition and inflammation (MICS), medications, and imbalanced covariates.



Overall, change in RDW over the first 5 quarters had an inverse linear relationship with mortality across all adjusted models. A change in RDW > 0 was associated with 28% higher mortality (hazard ratio [HR]: 1.28, 95% confidence interval [CI]: 1.21, 1.34) when compared to change in RDW ≤ 0 to >-1 percent.

In conclusion, increase in RDW over the first year of hemodialysis was associated with worse survival, independent of change in inflammatory markers and medications. Further studies should examine the utility of RDW as a predictive marker of mortality in hemodialysis patients and the underlying pathophysiology of this relationship.