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Dialysis Modality Choice and Outcomes

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The prevalence of end-stage kidney disease requiring kidney replacement therapy is rapidly growing worldwide. Individuals with end-stage kidney disease are at high risk of mortality and morbidity. Cardiovascular disease is one of the leading causes of dialysis mortality. Dialysis serves as the predominant mode of kidney replacement therapy across most countries, offering two primary modalities: hemodialysis and peritoneal dialysis.

Debates regarding the impact of dialysis modality on mortality have persisted over the past two decades. The ideal study design, a randomized controlled trial, faces limitations primarily due to challenges in recruitment, largely influenced by patients' preferences following comprehensive education on hemodialysis or peritoneal dialysis.

Both published randomized controlled trials to -date were prematurely terminated.

Consequently, evidence largely derives from observational studies, which inherently possess limitations. Some studies employing rigorous statistical methods have attempted to address these shortcomings. They incorporate adjustments not only fortotypical confounders but also to the risk of selection bias, along with employing a time varying study design to address patient treatment modality switches.

Overall, survival rates between hemodialysis and peritoneal dialysis remain comparable for most patients, with potential early survival advantages favoring peritoneal dialysis within the initial 2–3 years. Conversely, elderly patients and those with comorbidities such as diabetes mellitus are more likely to benefit from hemodialysis. Considering patient preferences and satisfaction, a comprehensive approach involving shared decision-making and outcome assessment is essential for the thorough evaluation of dialysis as a treatment modality.

