



# A Research Protocol for a Comparative Analysis of Peritoneal and Haemodialysis Survival and Complication Rates in Tertiary Centres in Cairo, Egypt

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## Abstract

End-stage renal disease is a significant public health burden in Egypt. Haemodialysis is the predominant treatment, but peritoneal dialysis offers an alternative. A direct comparison of patient outcomes between these modalities within Egyptian tertiary care settings is required. This protocol describes a study to compare survival and complication rates between peritoneal dialysis and haemodialysis patients. The primary objective is to determine the difference in all-cause mortality. Secondary objectives include comparing infection rates, cardiovascular events, and hospitalisation frequencies. A retrospective cohort study will use patient records from three tertiary centres in Cairo. The study will include adults initiating dialysis as their first renal replacement therapy. Participants will be followed from dialysis initiation until death, transplantation, transfer, or study end. Data on demographics, comorbidities, laboratory results, and clinical events will be extracted. Survival analysis will use Kaplan-Meier curves and Cox proportional hazards regression, adjusting for key confounders. As this is a protocol, no empirical findings are available. The analysis will yield comparative survival curves and hazard ratios for mortality and specific complications between the two dialysis modalities. The study will provide evidence on the comparative outcomes of dialysis modalities in a major Egyptian urban setting, which may inform clinical decision-making. Findings could be used to develop centre-specific clinical guidelines for modality selection. Results will also be disseminated to national health authorities to inform dialysis service planning. Peritoneal dialysis, haemodialysis, survival analysis, Egypt, renal failure, complications, protocol This protocol outlines a comparative study of dialysis outcomes in tertiary centres in Cairo. It will generate locally relevant evidence to guide treatment practices and policy.

**Keywords:** *End-stage renal disease, Haemodialysis, Peritoneal dialysis, Comparative analysis, Tertiary care centres, Egypt*

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