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End stage renal disease patients' nutritional status and handgrip strength variation before and after dialysis treatment

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Objectives : This study aims to examine the variations in handgrip strength before and after dialysis treatment and explore its association with nutritional status and general physical well-being among patients undergoing maintenance hemodialysis for end-stage renal disease (ESRD) with diabetes.

Methods : A cross-sectional study was conducted on 164 individuals with diabetes undergoing maintenance hemodialysis (MHD) for ESRD at the General Hospital for State Special Servants of Mongolia in 2025. Handgrip strength (HGS) and body weight measurements were assessed both before and after dialysis treatment.

Results : Among the 164 participants, 54.9% (n=90) were male, with a mean age of 51.2 ± 14.8 years and an average HD duration of 4.6 ± 4.1 years. The mean body weight change was 4.22 kg (ranging from 0-17 kg), a significant indicator of overall body condition. Those with substantial changes in body weight showed less variation in HGS before and after dialysis. For male participants with a body weight decrease of up to 5 kg, HGS increased from 22 kg to 28 kg, while those with a body weight decrease exceeding 5 kg experienced a decline in HGS from 48 to 28 kg. Additionally, a positive correlation was found between HGS and midarm circumference (Spearman's correlation coefficient, $r=0.126$, $p=0.001$), suggesting HGS as a potential indicator of nutritional status.

Conclusions : Monitoring handgrip strength before and after dialysis emerges as a valuable tool to assess patients' general health and nutritional status.