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## **A novel approach to monitoring for fluid status of maintenance hemodialysis patients using Remote Dielectric Sensing Technology**

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**Objectives :** Remote Dielectric Sensing (ReDS) is a non-invasive radar wave lung water monitoring instrument, the ReDS technology allows quantification of lung fluid content. Due to its high efficiency and convenience, this instrument can help in the management of patients with heart failure. However, the role of the ReDS technology in predicting MHD patient's fluid status is unclear.

**Methods :** Patients undergoing MHD at the hemodialysis center of Shanghai General Hospital from March 2023 to April 2023 were examined using the ReDS technology before and after dialysis, and related clinical data were collected. Our objective is to evaluate the correlation between ReDS and BNP, and to analyze the significance of ReDS detection data through case studies using limited data

**Results :** There were 31 patients with ReDS data before and after translucency, including 18 males (58%) and 13 females (42%), aged 19-83 years, with an average age of (59.8±15.6) years. There were 84 patients with ReDS data after translucency, including 48 males (57%) and 36 females (43%), aged 19-83 years, with an average age of (62.7±14.2) years. The results showed a positive correlation between pre dialysis ReDS and BNP, and there was no direct relationship between the difference in pre-dialysis and post-dialysis ReDS and net ultrafiltration volume. We analyzed different cases and inferred that patients with pre dialysis ReDS greater than 36% may have excessive weight gain during the dialysis interval. For patients with ReDS greater than 36% after penetration, titration is required to reduce dry weight; If the ReDS after penetration is less than 24%, the ultrafiltration amount needs to be adjusted, and the dry body weight needs to be increased by titration; MHD patients with ReDS less than 24% before penetration should be analyzed based on their nutritional status and specific circumstances.

**Conclusions :** ReDS is a non-invasive and convenient method for monitoring load for MHD patients