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Comparison Of Peritoneal DialysIs Compliance And Outcomes Among CAPD, APD, And RM-APD Patients

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Objectives : Peritoneal dialysis (PD) provides convenience and flexibility for end-stage kidney disease patients. Remote-monitored APD (RM-APD) using the ShareSource platform enables real-time tracking of dialysis parameters, allowing early detection of issues during treatment. However, data on its clinical impact remain limited. This study evaluates the effect of RM-APD on compliance and clinical outcomes compared to CAPD and APD.
Methods : A total of 73 PD patients (CAPD: 26, APD: 23, RM-APD: 24) were recruited from three tertiary hospitals. Baseline and one-year follow-up assessments included Kt/V, SBP, DBP, albumin, BCM, and PG-SGA score. PD compliance was evaluated using the medication possession ratio (MPR), based on prescribed and retained PD solution volumes over one year.
Results : Baseline characteristics, including age, sex, and comorbidities, were similar across groups. RM-APD had the highest compliance at 63.7% [56.6-74.1] ($p=0.002$), and even after adjusting for confounding variables, it remained 22.5% higher than APD ($p=0.003$). The number of emergency room visits over one year did not significantly differ among groups. However, RM-APD patients had 66% fewer hospitalization days than APD ($p<0.001$). The one-year changes in Kt/V and PG-SGA score were comparable across all groups. The OH/ECW %, an indicator of fluid overload, showed a decreasing trend in RM-APD (-1.7% [-6.6-1.1]), suggesting improved fluid management, but it was not statistically significant.
Conclusions : RM-APD improved PD compliance and reduced hospitalization days compared to APD, while dialysis adequacy and quality of life remained similar. Further studies are needed to evaluate its long-term benefits.