

Summary Of the Article

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Impact of CPAP on Respiratory Capacity in CKD Patients Undergoing Hemodialysis

This study investigated the effects of Continuous Positive Airway Pressure (CPAP) on the respiratory capacity of Chronic Kidney Disease (CKD) patients undergoing hemodialysis. Forty CKD patients aged 19–83 years were randomly assigned to control (n = 20) and CPAP (n = 20) groups. The CPAP group underwent a CPAP protocol (Positive End-Expiratory Pressure (PEEP): 5 cm H₂O, flow: 15 L/min, FiO₂: 33 %) during hemodialysis sessions three times per week for two months.

At baseline, no significant differences were observed between the groups in demographic characteristics, including age, gender distribution, height, body mass, and duration of hemodialysis. However, laboratory parameters such as serum creatinine and albumin levels differed between the groups at baseline and follow-up.

The CPAP group exhibited significant **improvements in respiratory and physical capacity** compared to the control group. Specifically, they showed higher forced vital capacity (FVC), forced expiratory volume in one second (FEV₁), peak expiratory flow (PEF), maximal inspiratory pressure, peak flow, and walked longer distances in the 6-minute walk test (6MWT). Furthermore, the CPAP group had lower systolic blood pressure (SBP), heart rate (HR), respiratory rate (f), and Borg scale ratings, indicating reduced perceived exertion and fatigue during physical activity.

Statistical analysis revealed significant differences between the control and CPAP groups in various parameters, including FVC (p < 0.001), FEV₁ (p < 0.001), PEF (p = 0.01), maximal inspiratory pressure (p < 0.001), and peak flow (p < 0.001). Additionally, significant differences were observed in SBP, HR, f, and distance walked in the 6MWT (p < 0.001) between the two groups.

Overall, the findings suggest that the introduction of a CPAP protocol during hemodialysis sessions positively impacts pulmonary function and physical capacity in CKD patients. CPAP therapy may serve as an effective intervention to improve respiratory function and enhance overall quality of life in this patient population. Further research is warranted to explore the long-term effects of CPAP intervention and its potential implications for morbidity and mortality in CKD patients.

This study underscores the importance of addressing respiratory impairment in CKD patients undergoing hemodialysis and highlights the potential role of CPAP therapy as part of comprehensive care for this population.