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Peritoneal Dialysis in Liver Cirrhosis and Heart Failure

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Peritoneal Dialysis in Liver Cirrhosis and Heart Failure Kim Jwa Kyung Abstract Patients with advanced chronic kidney disease or kidney failure complicated by liver cirrhosis with ascites or refractory heart failure represent one of the most challenging groups for kidney replacement therapy. Intermittent hemodialysis may be limited by intradialytic hypotension, low effective arterial volume, coagulopathy, encephalopathy risk, need for vascular access or anticoagulation, and recurrent congestion. Peritoneal dialysis (PD) offers a physiologically attractive alternative by providing slow continuous ultrafiltration, hemodynamic stability, ascites drainage or splanchnic decongestion, preservation of residual kidney function, and home-based treatment. In patients with cirrhosis and ascites, PD has historically been underused because of concerns about peritonitis, protein loss, catheter leakage, hernia, and poor wound healing. However, recent reviews and meta-analyses suggest that these concerns should be balanced against the poor tolerance of hemodialysis in this population. Mortality among cirrhotic patients treated with PD appears comparable to that of those treated with hemodialysis, and cirrhosis itself does not clearly worsen mortality among PD patients compared with non-cirrhotic PD controls. Peritonitis risk may be slightly increased, but mechanical complications are generally manageable in carefully selected patients. In refractory heart failure, the role of PD is best understood not only as solute clearance but also as chronic decongestive therapy. Observational studies and registry data have shown reductions in body weight, improvement in New York Heart Association functional class, and fewer hospitalizations after PD initiation. Mortality remains high, reflecting the advanced underlying disease, but PD may convert repeated crisis-based admissions into controlled, planned volume management. This lecture will review the pathophysiologic rationale, current evidence, patient selection, prescription principles, and practical pitfalls of PD in cirrhosis with ascites and heart failure. PD is not

universally appropriate and requires attention to infection risk, nutritional status, abdominal wall integrity, residual kidney function, caregiver support, and realistic goals of care. Nevertheless, in selected patients, PD should be discussed as a feasible, hemodynamically gentle, patient-centered decongestive strategy rather than as a last-resort modality only. For patients with kidney failure or advanced CKD plus cirrhosis with ascites or refractory heart failure, PD should be considered as slow, continuous decongestive therapy that may improve hemodynamic tolerance, symptom control, and hospitalization burden in appropriately selected patients.

Keywords: cirrhosis, ascites, heart failure, ESKD, peritoneal dialysis