



## PALLIATIVE CARE CASE OF THE MONTH

### “Treatment of Renal Failure in Patients Who Have Cirrhosis”

by

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**Case:** The patient is a 50-year-old woman with end-stage liver disease (Child C) complicated by a GI bleed and recent encephalopathy. The patient was recently admitted for spontaneous bacterial peritonitis, and on the third hospital day her creatinine began to increase from its baseline of 1.2 to 4.8 over four days. She was not a candidate for liver transplant due to recent drug use, malnutrition and deconditioning. Her MELD was 38. Both palliative care and nephrology were consulted to discuss goals of care. As part of the consult, the question about the patient’s prognosis, and the effectiveness of dialysis were raised.

**Discussion:** Acute kidney injury (AKI) in patients with decompensated cirrhosis occurs in at least 20% of all hospitalizations. The predominant etiologies in this setting are prerenal azotemia, acute tubular necrosis (ATN) and hepatorenal syndrome (HRS). It is important to distinguish between these different diagnoses as they have different treatments and prognosis.<sup>1</sup> The purpose of this case of the month is review the data regarding prognosis and the recommended treatment for each condition.

For patients with cirrhosis and AKI not due to HRS, the prognosis with dialysis is similar other critically ill patients with multi-system organ failure. Estimates of mortality range from 26% of all hospitalized patients to 94% of patients in the ICU.<sup>2</sup> The general recommendation in the literature is to initiate dialysis if the patient has AKI not due to HRS.<sup>1</sup>

Hepatorenal syndrome is a unique form of kidney injury resulting in from renal vasoconstriction in the setting systemic arterial vasodilation in patients with advanced cirrhosis. Type I is characterized by rapid deterioration in renal function where the serum creatinine increases by more than 100% from baseline to greater than 2.5 mg/dl within a 14-day period; Type II occurs in patients with refractory ascites with a moderate degree of functional renal failure or deterioration of kidney function that does not fulfill the criteria for HSR Type I. Hepatorenal syndrome occurs in up to 40% of patients with advanced cirrhosis at five years. Historically, median survival for hepatorenal Type I is two weeks, and four to six months for patients with hepatorenal Type II.<sup>3</sup>

These prognostic characteristics are complicated by the fact that recent treatments for Type I hepatorenal syndrome (albumin and vasoconstrictors) have a renal-response rates of around 50%.<sup>1,4</sup> The response is frequently durable with creatinine remaining below 1.5 after the cessation of vasoconstrictor therapy. Given this, the prognosis of hepatorenal syndrome Type I as terminal can no longer be assumed. Still, some patients are not diagnosed until late and continue to progress despite appropriate treatment (late diagnosis (e.g. the serum creatinine) is the most important predictor of response to vasoconstrictor therapy). The question, therefore, still remains of what to do for patients with advanced cirrhosis who develop hepatorenal syndrome Type I and progress to renal failure.

Here, the key question is whether the patient is a candidate for dialysis. While there is not a great deal of data, one single center study found that 35% of these patients survived to receive a liver transplant. Mortality was 94% in those not receiving a liver. While the one-year mortality of patients receiving a liver is quite high (30% versus 9.7% for all other liver recipients) given the very high mortality if the patient does not receive dialysis and a liver, renal replacement therapy is probably justifiable in these patients.<sup>5</sup>

The question then becomes, what happens to patients who are not liver transplant candidates? Here again, there is not a great deal of data. One study found that patients who are not liver transplant candidates who did receive dialysis had a median survival of 21 days, and 8 out of 30 survived greater than 30 days. In a retrospective analysis, the key prognostic feature was whether the patient was on mechanical ventilation. Zero patients survived for 30 days if on mechanical ventilation whereas 8 out of 15 survived more than 30 days if the patient did not have mechanical ventilation.<sup>6</sup>

It should be noted, however, that if the patient is not a liver transplant candidate that while survival on dialysis may occur for weeks to months the available data, and clinical opinion, is that longer-term survival is highly unlikely.

*Personal details in the case published have been altered to protect patient privacy.*

For palliative care consultations please contact the Palliative Care Program at PUH/MUH, 647-7243, beeper 8511, Shadyside Dept. of Medical Ethics and Palliative Care, beeper 412-647-7243 pager # 8513, Perioperative/ Trauma Pain 647-7243, beeper 7246, UPCI Cancer Pain Service, beeper 644-1724, Interventional Pain 784-4000, Magee Women’s Hospital, beeper 412-647-7243 pager #: 8510, VA Palliative Care Program, 688-6178, beeper 296. Hillman Outpatient: 412-692-4724. For ethics consultations at UPMC Presbyterian-Montefiore and Children’s page 958-3844. With comments about “Case of the Month” call Dr. Robert Arnold at (412) 692-4834.



*(Discussion Continued)*

The expert consensus is not to offer starting dialysis for patients who have hepatorenal syndrome Type I who are not liver transplant candidates.<sup>1,3</sup> Given this data, exceptions should be made for patients who have meaningful events occurring in the next days to weeks.

**Resolution of Case:** This patient was felt to have hepatorenal syndrome Type I. After review of literature and discussion with the patient and her family, it was decided that she should not receive dialysis. She therefore went home with hospice.

**References:**

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