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Towards Patient-Centered and Cost-Effective Care for Patients with Cirrhosis and Ascites: Spotlight on Outpatient Paracentesis Capacity

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The end-of-life for patients with cirrhosis is marked by increased personal and financial costs largely driven by frequent, if unrelenting, hospitalizations.^{1,2} While resource utilization can be intense, it may not be matched with the patient's needs. Liver transplantation is the only definitive treatment for end-stage liver disease but many are not candidates. For all patients with cirrhosis, but particularly when transplantation is not part of the plan of care, our focus must be on enhancing quality of life. This is the aim of palliative care. However, all evidence suggests we are falling short. Only 11% of patients with decompensated cirrhosis are referred for palliative care.³ Efforts to re-center the focus of care on the needs of patients with end-stage liver disease are urgently needed. Beyond palliative care consultation, there are opportunities to unburden patients in structure of care delivery for symptom management.

Symptomatic ascites requiring paracentesis is the perfect test-case. Patients with urgent needs are often referred for hospitalization when the outpatient capacity for paracentesis is limited. The downstream consequences attributable to in- or outpatient management of symptomatic ascites are examined in an important study by Hudson and colleagues in this month's issue.(citation-when-available)

The authors performed a nationwide audit of outcomes over the last year of life for all patients in the United Kingdom with cirrhosis and ascites who required a large volume paracentesis (LVP). This cohort included 13,818 people, capturing 30.8% of all liver related deaths in England between 2013 and 2015. This group of patients was particularly sick, notably with a higher-than-expected 52.5% 30 day re-admission rate.^{1,4} Hudson et al specifically evaluated the impact of LVPs provided by day-case units. This outpatient model provides same-day procedures as an alternative to hospitalization for patients with symptomatic ascites. Patients who attended a day-case unit for a LVP at least once in their last year of life were found to have significant reductions in the cost of medical care, inpatient bed days, 30-day readmission rates, and odds of dying in hospital.

These improved outcomes raise two major questions. First, all admissions for symptomatic ascites are unnecessary burdens on patients and payers. We believe that we can expect

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similar findings if we could apply if this model were applied to all patients with ascites prospectively, *before* they approach the last year of their life. This study corroborates findings from Morando et al, who showed that models of care with an emphasis on outpatient care, including access to a “day hospital” for urgent procedures such a paracentesis can improve 12 month mortality, 30 day re-admission, and lower costs.⁵ This model has not been widely incorporated into clinical practice, possibly because it requires significant restructuring of care delivery. However, this is a patient-centered, effective and cost-saving intervention. Accordingly, the availability of outpatient paracentesis could be considered a new quality indicator for hepatology centers.

Second, we must do better in linking patients with end-stage liver disease to palliative care services, even if they do not have malignant liver disease. Patel et al showed that during *terminal hospitalizations*, patients with HCC are more likely to see an inpatient palliative care team than those with non-malignant end stage liver disease.² Hudson et al found that in this nationwide cohort, deaths caused by hepatocellular carcinoma (HCC) were associated with lower costs, fewer inpatient bed stays, and reduction in unplanned hospital deaths compared to deaths not related to HCC. The authors postulate this was related to higher enrollment in palliative care for those with HCC, as an early palliative care approach can limit futile interventions while focusing on patient wishes (i.e. dying at home rather than during an unplanned hospitalization). Palliative care appears to be a key part of the solution – is it? Data are needed.

Several limits must be considered when interpreting these findings. First, these results must be confirmed in a prospective study in order to properly adjust for confounding. Second, many patients spent, on average, one day in the hospital for every two days at home after they first presented for medical care in the last year of life. In addition to a prospective study, qualitative assessment of patient preferences and motivations as well as caregiver support may be needed to interpret these data. Third, alternative strategies were not considered. While the authors did not comment on the use of indwelling peritoneal catheters for ascites, this approach is often used in hospice care to avoid patient discomfort from and the costs associated with frequent LVPs.

This study by Hudson is further proof our patients with ascites and the health care system overall benefit from improved access to outpatient care. Beyond cost-savings, it is key to providing compassionate care for patients in their last year of life.

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