Reply

TO THE EDITOR:

We would like to thank Drs. Kumar and Pillai for their interest in our article[1] on the safety and feasibility of using the alfapump as a means of managing refractory ascites in patients with cirrhosis. The pump allows the daily continuous slow removal of ascites while maintaining a relative flat abdomen. Placement of the alfapump results in significant improvement in patient mobility, greater caloric intake, and, hence, better nutritional status[2] and an overall improved quality of life.[3]

Although the removal of ascites is associated with the development of postparacentesis circulatory dysfunction (PICD),[4] albumin administration has been advocated in patients who undergo large-volume paracentesis (LVP).[5] However, in patients who are undergoing paracentesis of <5 L, renal function may be unaffected by the fluid shift related to the paracentesis.[6] In the study of Solà et al.,[7] activation of the vasoconstrictor systems only became evident when the pump rate was increased after day 7 following pump implantation, once again demonstrating that the development of PICD in decompensated cirrhosis is closely linked to the amount of volume shift during paracentesis. However, the activation of the vasoconstrictor systems appeared to be of limited clinical consequence because there was no change in either the cardiac output or in the mean arterial pressure in these patients. It should be noted that only 3 of the 18 episodes of acute kidney injury (AKI) observed in these patients were related to hypovolemia, and these were episodes of stage 1 AKI that resolved either spontaneously or with reduction of ascites removal volume. Therefore, mandating the universal use of albumin with the alfapump may not be advisable. Midodrine is also not required because the alfapump studies published to date have not reported hypotension either at baseline or with alfapump use. Finally, diuretics should also be stopped upon insertion of the alfapump because they are no longer required.

Although sarcopenia is a real concern in decompensated cirrhosis and ascites, most of the patients selected for alfapump use in the various studies belong to Child-Pugh B with relatively low Model for End-Stage Liver Disease scores. Therefore, these were not dying cachectic patients with cirrhosis. The personnel trained to insert the alfapump, whether a surgeon or an interventional radiologist, are trained to insert the pump in an area of the abdominal wall with a minimal amount of subcutaneous tissue and to avoid areas on the abdominal wall with visible collateral vessels. If there is not a sufficient amount of subcutaneous tissue available, placement under the muscle is an option. This would, by and large, avoid the concerns raised by Drs. Kumar and Pillai. The principal investigators of the alfapump studies have recognized that placing the alfapump too superficially can cause overlying skin redness from constant pressure of the pump rubbing against clothing. Therefore, the alfapump is usually placed in a deep subcutaneous pocket to avoid this complication.

Finally, there is already a published randomized controlled trial comparing the use of the alfapump versus repeat LVP as a treatment for refractory ascites.[3] Patients had reduced requirements for LVP in the alfapump group. They also reported significant improvement in quality of life and nutritional status. There were more adverse events and serious adverse events in the alfapump group. These events included AKI in the immediate postoperative period and reintervention for pump-related issues. However, these were manageable and did not impact survival. The currently recruiting randomized controlled trial, the Alfapump® System in the Treatment of Refractory or Recurrent Ascites (POSEIDON) study (clinicaltrial.gov NCT03973866), will carefully monitor for any significant adverse events, such as AKI. Of course, maintaining some form of

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dietary sodium restriction would also reduce the daily pump rate as the amount of ascites formed is reduced. These fine tunings of the operational procedures will help patients enjoy the potential benefits of the alfapump without incurring significant adverse events.

Therefore, the road to having the alfapump as a definitive tool in the management of refractory ascites may not be as long as Drs. Kumar and Pillai have suggested. In experienced hands and with the appropriate patient selection, it may prove to be a useful addition for hepatologists in their management of patients with cirrhosis with refractory ascites.

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