Protection of Intestinal Permeability in the Perioperative Period

To the Editor:

In addition to its major function of digestion and absorption, intestine acts as an important mechanical and functional barrier to antigens, toxic and enteric microorganisms. Intestinal permeability (IP), the ability of small molecules to penetrate the gut mucosa, can be influenced by several factors and conditions, surgical stress being one of them. Increased IP promotes translocation of bacteria and their products to normally sterile extra-intestinal sites such as mesenteric lymph nodes, liver, spleen, and the systemic circulation and has been incriminated in septic shock. Our recent data have shown that the induction of systemic inflammatory response syndrome, infections, sepsis, and multiple organ failure. Moreover, recent data have shown oxidative stress, and accelerate wound healing.

The potential effect of *Saccharomyces boulardii* or erythropoietin on IP in the perioperative period has not been evaluated. In a study of 8 patients undergoing elective major abdominal surgery, we observed a postoperative IP reduction in those receiving *S. boulardii* orally (n = 4) and those administered per os erythropoietin (n = 4). Our very preliminary results implied that, compared with preoperative values, postoperative IP was reduced in patients administered *S. boulardii* (0.03 vs. 0.06, *P* = 0.05) as well as in those receiving erythropoietin (0.08 vs. 0.16, *P* = 0.04). Although it is early to draw conclusions and our findings are very preliminary, these results seem promising.

Preservation of the gut barrier function in the perioperative period is a very important and challenging issue. Even though several agents have been evaluated, only few have shown encouraging results in humans. Further studies are needed to evaluate the clinical effects of *S. boulardii* and erythropoietin.

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which was a retrospective analysis of a previous multicenter study of ribavirin dosage and length of therapy. This study does not recommend 24 weeks of therapy for genotype 1 rapid responders, but rather noted that early response identified those who had SVR with shorter therapy. We are not aware of any broad recommendations derived from large prospective studies that advocate only 24 weeks of antiviral therapy in genotype 1 patients. Moreover, evidence from Europe suggests that a patient with genotype 1 needs to have a negative HCV RNA for at least 36 weeks to achieve a 90% chance for a SVR. It is also important to remember that only about one-fourth of patients have RVR. Therefore, even if one is a proponent for shorter therapy in rapid responders, the bulk of genotype 1 patients will still require a year of therapy.

In the United States, treatment for hepatitis C remains quite expensive and many patients have co-morbidities that make treatment problematic. Also, evidence suggests that only 10% of patients with HCV will suffer liver-related mortality. Therefore, until pegylated interferon and ribavirin are replaced, it is unlikely that there will be consensus recommendations to routinely treat all patients with HCV. Thus, it seems prudent to try to identify patients most likely to benefit from therapy. Unfortunately, some patients and health care systems in the United States are burdened with limited resources. We care for a large number of patients in the Texas Department of Corrections who are infected with hepatitis C. On the basis of the findings from our prospective study, we use the APRI for screening. For genotype 1 patients without contraindications, if the APRI is \( \leq 0.42 \) they are not treated or evaluated further. Patients with an APRI from 0.42 to 1.19 undergo a liver biopsy and subsequent treatment if a fibrosis stage F2 or more (Batts Ludwig classification) and those with an APRI \( \geq 1.2 \) receive treatment. Because transient elastography is not approved for use in the United States, we cannot comment on its use in a treatment algorithm.

Ultimately, we think that the greatest use of the APRI and other hepatic fibrosis markers may be in the longitudinal management of patients with chronic hepatitis C and the prediction of those at higher risk for complications such as hepatocellular carcinoma.

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