## To the Editors:

Patients undergoing orthotopic liver transplantation (OLT) for such diseases as primary biliary cirrhosis (PBC) or autoimmune hepatitis (AIH) have an immune disorder that predominantly targets the liver. There is no reason to believe that replacement of the target organ would modify that process, except by the concomitant administration of immunosuppressive agents.

Hayashi et al¹ have shown a higher incidence of acute cellular rejection (ACR) in patients with AIH and PBC. Similarly, Berlakovich et al² reported a 59% incidence of ACR in patients with PBC compared with 38% in patients with alcoholic liver disease (P < .02). In her series, death from sepsis occurred in 26% of the patients with PBC compared with 11% of the patients with alcoholic liver disease. In a retrospective analysis of liver biopsies performed specifically to rule out ACR, we found ACR in 10 of 57 patients (18%) with alcoholic liver disease compared with 11 of 19 patients (58%) with PBC (P < .005) or 9 of 12 patients (75%; P < .005) with primary sclerosing cholangitis (PSC).

These findings are not, however, reflected in the National Institute of Diabetes and Digestive and Kidney Diseases database (R.H. Wiesner, personal communication, November 1996). This could be the result of pooling observations from several centers with different diagnostic criteria and different indications for liver biopsy. When we tried to show an association between the incidence of ACR and the percentage of diagnoses reported as PBC, PSC, and AIH using the references reported in our

publication,<sup>3</sup> we were able to establish a correlation, although it did not reach statistical significance (P < .1). This is not surprising because of the inclusion of up to 30% of patients diagnosed as "other" in some series and the apparent absence of AIH as a diagnosis from virtually all the publications.

Patients who undergo OLT are biologically heterogeneous and may therefore require different immunosuppression postoperatively. As these regimens are re-examined and revised downward, it may be useful to examine the outcome stratified by the diagnosis that led to the need for OLT in the first place.

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## References

- Hayashi M, Keefee EB, Krams KM, Martinez OM, Ogjogho ON, Samuel KSS, et al. Allograft rejection after liver transplantation for autoimmune diseases. Liver Transplant Surg 1998;4:208-214.
- Berlakovich GA, Imhof M, Karner-Hanusch J, Goetzinger P, Gollackner B, Gnant M, et al. The importance of the effect of underlying disease on rejection outcomes following orthotopic liver transplantation. Transplantation 1996; 61:554-560.
- Fisher LR, Henley KS, Lucey MR. Acute cellular rejection after liver transplantation: Variability, morbidity, and mortality. Liver Transplant Surg 1995;1:10-15.