Although the fecal immunochemical test (FIT) would reduce the total number of screening colonoscopies performed in pre-LT patients, it does not obviate the need for colonoscopy in those patients who test positive. FIT-positive pre-LT patients would still be at risk for the reported postcolonoscopy complications if standard polyethylene glycol (PEG) solution is used for bowel preparation.

Kimura and colleagues evaluated OC-light FIT (cutoff 10 μg/g of feces) in 20,886 average-risk patients; 2,930 patients (8.3%) had a positive result.[3] A positive FIT had a positive predictive value of 3.0% for CRC and 20.8% for AA.[3] If the same test characteristics of OC-light FIT from that study are applied to the population in the study by Oey and colleagues (n = 808), it is expected that 67 (8.3%) patients would have a positive FIT. CRC will be detected in 2 (3%) patients and AA will be detected in 14 (20.8%) patients undergoing colonoscopy. FIT will miss about 30 patients with AA that may progress to CRC after LT in the setting of immunosuppressive therapy.

Furthermore, a recent systematic review and meta-analysis of 31 studies (n = 120,255) evaluating FIT at different cut-off values for CRC and AA detection revealed that OC-light FIT (cutoff value 10 μg/g) had a sensitivity and specificity of 90% and 91%, respectively, with a false-positive rate of 9%, which is unacceptably high for an annual screening test.[4] The sensitivity and specificity for detecting AA was 43% and 90%, respectively, with an unacceptably high false-negative rate of 57%.[4] Moreover, FIT is ineffective for detecting sessile serrated polyps.[5]

Although prospective studies evaluating the use of FIT in pre-LT patients are warranted, colonoscopy remains the screening procedure of choice in pre-LT patients.

**Chimezie U. Mbachi, M.D.**[1]
**Ayokunle T. Abegunde, M.D., M.Sc., M.R.C.G.P., F.A.C.P.**[2]
[1]**Department of Internal Medicine**
**John H Stroger Jr Hospital of Cook County**
**Chicago, IL**
[2]**Division of Gastroenterology and Nutrition**
**Loyola University Medical Center**
**Maywood, IL**

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Author names in bold designate shared co-first authorship.



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## REPLY:

We thank our colleagues for their interest in our study. Although the risk for colorectal carcinoma after liver transplantation may be increased, our study shows that in this particular, vulnerable population the yield of advanced neoplasia detected by colonoscopy is low and is associated with an elevated risk of complications. In addition, we would like to stress the fact that only just over 50% of the screened patients actually underwent liver transplantation. Based on these data, the timing of performing a screening colonoscopy may be reconsidered, e.g., performing screening colonoscopies post–liver transplantation in a subset of patients.

Although the sensitivity of the fecal immunochemical test (FIT) is low for adenoma and serrated lesions, sensitivity for colorectal carcinoma is around 80%. Therefore, FIT may be used as an alternative to screen patients pre–liver transplantation. We agree that if FIT is chosen, the cutoff used will be essential to assure an optimal benefit–risk balance.

We continue to believe that the benefit–harm ratio of screening colonoscopy in all potential candidate patients

for liver transplantation is questionable and that other strategies should be considered and further explored.

Rosalie C. Oey, M.D.
Manon C. W. Spaander, M.D., Ph.D.
Henk R. van Buuren, M.D., Ph.D.
Robert A. de Man, M.D., Ph.D.
Department of Gastroenterology and Hepatology
Erasmus Medical Center University Hospital
Rotterdam, the Netherlands



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# Letter to the Editor: Beta-Blockers Are Preferable to Banding Ligation for Primary Prophylaxis of Variceal Bleeding?

## TO THE EDITOR:

I read with interest regarding the comparison of therapies for primary prophylaxis of esophageal variceal bleeding.[1] This systematic review provides important updated knowledge for clinicians when deciding on whether to perform prophylaxis of first esophageal variceal bleeding. The study revealed that nonselective beta-blockers may decrease all-cause mortality and that it had a lower risk of serious complications compared with banding ligation. The authors concluded that nonselective beta-blockers may be the initial approach for primary prophylaxis of variceal bleeding. In actuality, the choices between beta-blockers and banding ligation merit further consideration.

It is well demonstrated that nonselective beta-blockers are associated with a higher incidence of adverse events. This may lead to discontinuation of therapy. A hemodynamic study showed that up to 43% of patients with cirrhosis were not responsive to nonselective beta-blockers.[2] Banding ligation may be associated with serious adverse events such as ulcer bleeding or perforation; however, the incidence is appreciably low.[3] The incidence of postbanding ulcers could be reduced by a longer interval of ligation.[4] Banding ligation instead of beta-blockers is prone to result in variceal obliteration. The achievement of variceal obliteration could create a long period of freedom from worry of hemorrhage for high-risk patients. These facts may explain why a slight majority of patients and physicians prefer banding ligation over beta-blockers.[5] It appears that both nonselective beta-blockers and banding ligation could be the initial approach for primary prophylaxis of variceal bleeding. Apart from patients with intolerance and contraindications, shared decision making may be the most practical approach for patients with high-risk esophageal varices nowadays.

Gin-Ho Lo, M.D.
Department of Medical Research, E-DA Hospital
School of Medicine for International Students
I-Shou University
Kaohsiung, Taiwan

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