Percutaneous Liver Biopsy Complications in Patients with Chronic Renal Failure

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pliance and cooperation during the procedure [2]. All patients received local anesthesia with 2% prilocaline before the procedure. Prothrombin time 3 s over the control, platelet count less than 75,000/mm³, fever, sepsis and severe ascites were regarded as absolute contraindications for biopsy, whereas hemoglobin, BUN and creatinine values that were out of the normal range, and mild to moderate ascites were not. After biopsy, patients were asked to remain supine on their bed for 4 h, and allowed to mobilize thereafter. Vital signs were checked every 15 min for the first 2 h after the biopsy, and then every 30 min for the next 2 h and as usual thereafter.

Dear Sir,

Percutaneous liver biopsy (PLB) is a valuable method in detecting hepatic diseases. The procedure is quite safe and may be considered as a routine diagnostic procedure in patients with suspected liver disease [1], but the complications and risk factors of PLB have not been clearly demonstrated for chronic renal failure (CRF) patients. Since most of the patients with CRF are considered as candidates for renal transplantation, all CRF patients must be examined for hepatitis virus infection and its consequences, because posttransplant immunosuppressive drug therapy will worsen the course of hepatitis.

We performed PLB, using the Tru-Cut biopsy needle (ABC, Monoject, Sherwood Medical, USA) in a consecutive series of 150 patients, 74 (49%) with CRF who were candidates for renal transplantation and 76 (51%) without renal disease. Complications were prospectively recorded and compared between the two groups to find out the risk of PLB in patients with CRF. Demographic and clinical characteristics of the patients are summarized in table 1. All biopsies were done after the patients were hospitalized. Sixty percent (n = 95) of the biopsies were performed by a staff gastroenterologist, 38% (n = 62) were performed by 2 senior residents in gastroenterology and a minority (2%, n = 3) of biopsies were performed by a radiologist using ultrasound guidance. The biopsy site was determined solely by physical

examination. Patients generally did not receive premedication as this possibly hinders patient corn-

Table 1. Comparison of some demographic and clinical characteristics of the patients

Hematocrit was monitored every hour for the first 3 h and determined at the 12th hour after the procedure. Patients were discharged 24 h after the procedure if there were no complications. Student's t test was used to evaluate the significance of differences between means of variables.

The patients in both groups were similar with respect to age, sex, site of biopsy, platelet counts, prebiopsy values of prothrombin time and aPTT. CRF patients had higher prebiopsy mean BUN and creatinine values (67.8 ± 26.5 vs. 23.0 ± 13.1 mg/dl, $p < 0.01$, and 6.7 ± 3.2 vs. 1.3 ± 1.6 mg/dl, $p < 0.01$, respectively) and lower hemoglobin levels

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than the non-CRF group (9.5 ± 2.1 vs. 13.0 ± 2.2 g/dl, $p < 0.01$). Bleeding was encountered in 7 (9.4%) of 74 CRF patients, whereas no hemorrhagic complication was encountered in the group without renal disease. There was no mortality related to the liver biopsy in either group, but 1 patient with CRF had surgical intervention because of severe bleeding. Of the total 150 patients, 4% had moderate and 2% had severe pain at the biopsy site; 2% had mild to moderate hypotension and 0.6% had severe hypotension. No significant difference was observed between the complication rates of biopsies performed by the staff gastroenterologist and the residents.

The principal finding of this study was that liver biopsies performed in CRF patients have a high rate of bleeding complications compared to the control group. Minor complications such as pain at the biopsy site and mild transient hypotension did not differ between the two groups. Another obser-

vation is that only a minority of patients with CRF required surgical intervention to control the bleeding complication. Death related directly to a liver biopsy and occurring within a week of biopsy was not seen in this series. Only 1 patient was rehospitalized because of bleeding after completion of the 24-hour follow-up period and subsequent discharge from hospital.

It is well known that in patients with CRF on maintenance hemodialysis therapy, coagulation mechanisms are impaired due to platelet dysfunction, uremia, and heparin-induced thrombocytopenia [3-6]. Therefore the risk of hemorrhage after liver biopsy in this group of patients is high, as expected. In our opinion, if liver biopsy should be done in CRF patients, transjugular liver biopsy can be performed, as proven safe and efficient [7], or plugging of needle track with absorbable gelatin sponge may be chosen as was successfully done in patients with impaired blood coagulation [8, 9].

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