Esophageal variceal ligation as a primary or secondary prophylaxis of esophageal variceal bleeding

Background & Aims: Endoscopic variceal ligation (EVL) with/without beta-blockers is widely accepted as a primary or secondary prophylaxis of esophageal variceal bleeding. However, the long-term outcome and rebleeding risk after EVL have not been fully elucidated. Thus, we aimed to investigate the efficacy and rebleeding rate of EVL, and to evaluate the post-EVL complications in this study. Methods: Patients that underwent EVL for a primary or secondary prophylaxis at Seoul National University Hospital between January 2004 to December 2008 were prospectively enrolled. Cases with hepatocellular carcinoma were excluded. EVL was repeatedly performed till the esophageal varix at high-risk of bleeding (grade ≥2 or with red color sign) disappeared. Death and rebleeding events, additional interventions needed, complete eradication rate, and complications after EVL were evaluated. Results: A total of 155 patients (mean age, 57.0±9.9 yr; male, 76.1%) were included in this study. Sixty-three patients (40.6%) took beta-blockers with EVL. Median follow-up duration was 28.7 months (range, 0-73 mo) and 21 patients died during follow-up period. Mortality cases can be classified into early (≦3 mo, n=10) and late (>3 months; n=11) death events. Although deaths caused by variceal bleeding were reported in 7 of 10 early deaths (70.0%), they were relatively uncommon in late deaths (4/11, 36.3%). Higher initial serum creatinine level (hazard ratio, 1.43; P=0.001) and worse Child-Pugh class (hazard ratio, 2.54; P=0.004) were independent risk factors of deaths after EVL. However, the degree of portal hypertension according to P2/MS value and co-treatment with beta-blockers were not independent risk factors (P>0.05, both). During the observational period, 17 patients (11.0%) experienced rebleeding, while 41 patients (26.5%) achieved complete eradication of esophageal varix. The mean number of EVL sessions required to achieve eradication was 4.79 sessions (range, 1-11), and esophageal varices were obliterated within median 21 months (range, 0-61 months). Peri-procedural complications was rare, which included bleeding (7 cases, 1.10%), transient bacteremia (1 case, 0.16%), and esophageal rupture (1 case, 0.16%). Conclusions: EVL showed high efficacy as a primary or secondary prophylaxis in cirrhotic patients and low rate of rebleeding and rebleeding-related mortality. Therefore, EVL with/without beta-blocker can be safely and effectively applied to patients with esophageal varices.