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Safety and efficacy of a new bridging therapy protocol using low molecular weight heparin in patients with high thromboembolic risk undergoing gastrointestinal endoscopy

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Introduction

Low molecular weight heparin (LMWH) has been increasingly used as bridging therapy (BT) for patients undergoing gastrointestinal (GI) endoscopic procedures. However, specific data on its efficacy and safety in patients with high thromboembolic risk remains limited.

Objectives

This is a retrospective study of all patients with high thromboembolic risk requiring BT prior to GI endoscopy over a period of 10 years in KCC.

Methodology

Patients who had received LMWH under the newly introduced bridging therapy protocol since 2009 were analyzed. And the results were compared with the historic controls – those who had received unfractionated heparin (UFH) as BT.

Result

From Jul 2002 to Sept 2012, a total of 206 GI procedures were performed in patients with high thromboembolic risk according to the American Society of Gastroenterology Endoscopy guideline. These included mitral valvular replacement (MVR) (54.4%), double valvular replacement (17.0%), aortic valvular replacement with AF (9.2%), atrial fibrillation (AF) with chronic rheumatic heart disease (8.3%), deep venous thrombosis/pulmonary embolism within 3 months (5.3%) and thrombophilia syndromes (1.0%). Enoxaparin and UFH were used as BT in 97 (47.1%) and 109 (52.9%) patients respectively. Both groups had comparable baseline characteristics and indications for anti-coagulation. The endoscopic procedures carried out included OGD (53.4%), colonoscopy (39.8%) and ERCP (6.8%). Enoxaparin, used at a full therapeutic dose, was started about 2 days after stopping warfarin when the median INR was less than 1.5. After endoscopy, most (71.8%) had enoxaparin resumed on day 0, and was continued for a median of 5 days afterwards. LMWH was well tolerated and none of the patients had arterial or venous thromboembolism within 30 days after procedure. But ischemic stroke occurred in 2 (1.8%) patients in the UFH

group (vs none in LMWH group, P=0.499). The overall rate of bleeding after endoscopic procedure was 2.4%. GI bleeding complications, all occurred after colonoscopic polypectomy, were tends to be more common in the LMWH group - moderate bleeding (3 patients (12.5%) vs. 0 patients (0%), P=0.234, minor bleeding (1 patient (4.2%) vs. 1 patient (4.3%), P=1.000). However, in the UFH group, one patient (0.9%) had severe retroperitoneal hemorrhage and another patient (0.9%) had acute coronary syndrome occurred after the procedure. No anti-coagulation related mortality was noted in both groups during the follow-up period. For elective procedures, the use of LMWH was associated with a significantly shorter median length of hospital stay (4.5 vs. 7.9 days, P=0.007). Conclusions LMWH is an effective and safe bridging therapy for patients with high thromboembolic risk undergoing GI endoscopy. Besides, it may shorten the length of hospital stay and reduce the associated healthcare cost.