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Orthop Nurs. 2011 Sep-Oct;30(5):312-6. doi: 10.1097/NOR.0b013e31822c5c28.

A mobile compression device compared with low-molecular-weight heparin for prevention of venous thromboembolism in total hip arthroplasty.

Hardwick ME, Pulido PA, Colwell CW Jr.

Author information

Abstract

INTRODUCTION: Prevention of venous thromboembolism (VTE), including deep venous thrombosis (DVT) and pulmonary embolism (PE), has been at the forefront of orthopaedic care for many years for lower extremity arthroplasty, which is at high risk for VTE. Risk of bleeding increases in total hip arthroplasty (THA) with low-molecular-weight heparin (LMWH) prophylaxis. A mobile compression device (MCD) that allows patients to move freely in hospital and at home may be safer.

HYPOTHESIS: The study hypothesized that patients using MCD would have less major bleeding than patients using LMWH without affecting the efficacy of thrombosis prevention in THA.

SAMPLE: Following THA, 395 patients at 9 healthcare sites in the United States were randomized to receive either MCD or LMWH for VTE prophylaxis.

METHODS: A mobile compression device was applied in the operating room and continued for 10 days with or without aspirin 81 mg daily. Low-molecular-weight heparin was started the morning after surgery and continued for 10 days. Days 10-12 following surgery, bilateral duplex ultrasound was performed on all patients. Bleeding events were recorded during treatment and VTE events were recorded for 3 months. Number of hours of device use was recorded.

FINDINGS: Major bleeding events occurred in 11 patients, all in the LMWH group (6%). Venous thromboembolism occurrence was similar, 5.1% in the MCD group and 5.3% in the LMWH group. The MCD group used the device 83% of possible usable time.

DISCUSSION: Findings of significantly less major bleeding in the MCD group than the LMWH group supported our hypothesis with no significant difference in VTE.

PMID: 21934585 [PubMed - indexed for MEDLINE]

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