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Bleeding after hip arthroplasty not increased by heparin plus dihydroergotamine

We measured the postoperative bleeding following total hip replacement when low-dose heparin plus dihydroergotamine was used for preventing postoperative deep-venous thrombosis. The patients were allocated by random numbers to either 5,000 IU heparin and 0.5 mg dihydroergotamine injected subcutaneously twice daily or to placebo injections.

The mean postoperative bleeding in the anticoagulation group of 91 patients was 583 ml and in the placebo group of 103 patients 529 ml, i.e., there was no difference between the two groups.

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Introduction

The incidence of postoperative deep venous thrombosis has been described as high as 76 per cent in hip surgery (Loudon et al. 1978). Low-dose heparin plus dihydroergotamine has proven useful in preventing these complications following major abdominal and orthopedic surgery (Breddin et al. 1983, Koppenhagen & Haring 1981, Bracke et al. 1983, Morris & Hardy 1981, Wille-Jørgensen et al. 1986).

We have studied the risk of postoperative bleeding due to anticoagulation in a patient material studied in relation to venous thrombosis (Wille-Jørgensen et al. 1986).

Patients and methods

Two hundred and two patients who were scheduled for total hip replacement entered a prospective, double-blind, randomized trial. The patients were allocated by random numbers to either anticoagulation (5,000 IU heparin and 0.5 mg dihydroergotamin injected subcutaneously every 12 hours) or placebo injections (isotonic saline) every 12 hours. The injections were started 1 hour preoperatively and were continued for 7 days.

Eight patients were withdrawn from the trial owing to incorrect recording of bleeding (4 patients in each group). Totally, 194 patients could be evaluated (Table 1). The patients in the two groups did not differ as regards type of anesthesia.

The postoperative bleeding was recorded as the bleeding through the subfascial and subcutaneous vacuum drains. The drainage was maintained for maximally 4 days and was discontinued when the bleeding was less than 20 ml/day.

For statistical calculation, the Student's *t*-test was used. The risk of neglecting a difference of 100 ml (type-two error) proved to be less than 12 per cent.

Results

There were no differences between the two groups (Table 1).

Besides small skin hematomas at the injection sites in the anticoagulation group, there were no hematomas that needed surgical intervention in either of the groups, and there were no infections. No other side effects from the heparin plus dihydroergotamine injections were observed.

Table 1. Bleeding after hip arthroplasty

	Sex		Age Mean, range	Bleeding (ml) Mean, range (SD)
	M	F		
Anticoagulation	35	56	69, 30–87	583, 70–1540 (305)
Controls	34	69	70, 27–85	529, 0–1590 (256)

Discussion

In this study, we have focused on the postoperative bleeding only, because the hemostasis during operation is maintained by electrocoagulation and ligatures. The lack of increased postoperative bleeding in the anticoagulation group could possibly be explained by a vasoconstrictory effect of

dihydroergotamine; Breddin et al. (1983) found increased postoperative bleeding in patients treated with 5,000 IU heparin without dihydroergotamine given twice daily subcutaneously, and Morris & Hardy (1981) found no difference in total blood loss in patients treated with low dose heparin plus dihydroergotamine versus untreated controls.

Our results confirm these previous observations. The risk of postoperative bleeding thus does not contraindicate the use of heparin plus dihydroergotamine in patients undergoing total hip replacement. The patients who did not have anticoagulation had a higher incidence of deep venous thrombosis and pulmonary embolism (Wille-Jørgensen et al. 1986).

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