

KARIN AMELİYATLARINI TAKİBEN TROMBOEMBOLİ RİSKİ VE PROFİLAKSİ

THE RISK AND PROPHYLAXIS OF THROMBOEMBOLISM AFTER ABDOMINAL OPERATIONS

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Özet

Mart 1995 ve Kasım 1996 tarihleri arasındaki 21 aylık periyot esnasında büyük karın ameliyatı geçiren 180 hasta üzerinde prospektif, kontrollü bir çalışma gerçekleştirildi. Çalışma gurubundaki doksanbir hastaya günde bir kez, preoperatif 1 gün önce başlanarak 7 gün süreyle düşük molekül ağırlıklı heparin verildi. Kontrol gurubundaki hastalara ise günde 1 kez aynı hacimde serum fizyolojik verildi. Bütün hastalara preoperatif dönemde ve klinik şikayeti yoksa postoperatif 7.günde Doppler sonografi ile alt ekstremitelere kontrolü yapıldı. Pulmoner emboli şüphesi olan hastalara akciğer perfüzyon sintigrafisi yapıldı. Kontrol gurubunda 6 hastada pulmoner emboli ve 19 hastada derin ven trombozu vardı. Çalışma gurubunda ise 1 hastada pulmoner emboli ve 8 hastada derin ven trombozu vardı. Tromboembolik olaylar kontrol gurubunda çalışma gurubundan istatistiksel olarak anlamlı şekilde fazlaydı ($p < 0,01$). Sonuçta büyük karın operasyonu geçiren hastalarda düşük molekül ağırlıklı heparin profilaksisinin tromboemboli riskini ortadan kaldırmadığını fakat özellikle pelvik diseksiyon yapılan malign hastalarda yararlı olabileceği kanaatine vardık.

Anahtar kelimeler: *Tromboemboli, Düşük molekül ağırlıklı heparin*

Summary

A prospective controlled study was conducted in 180 patients who had undergone a major abdominal surgical procedure during a 21-month period between March 1995 and November 1996. Ninety-one patients received low molecular weight heparin one dose preoperatively and once daily for 7 days postoperatively (study group) and 89 patients received saline solution in a same manner (control group). All patients were performed lower extremity control by Doppler sonography in the preoperative period and at the 7th postoperative day if clinical signs were absent. The patients who had a suspicion of pulmonary embolism were performed lung perfusion scintigraphy. Six patients had pulmonary embolism and 19 patients had deep vein thrombosis in the control group. One patient had pulmonary embolism and 8 patients had deep vein thrombosis in the study group. Thromboembolic events detected in the control group were statistically higher than those detected in the study group ($p < 0.01$). We concluded that low molecular weight heparin does not exclude thromboemboli risk but may be beneficial in the patients who have a major abdominal surgery, especially those who have a difficult pelvic dissection or malignancy.

Key words: *Thromboemboli, Low molecular weight heparin*

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Introduction

During prolonged general anesthesia and any period of limited mobility following surgery, thrombus formation may be initiated in the deep veins of the legs (1). There is always the risk that a deep vein thrombosis (DVT) will embolise, and it is therefore a potentially life threatening condition (2,3). In the USA postsurgical and medical thromboembolic disorders affect over 1 million Americans yearly requiring hospitalization (4). Pulmoner embolism (PE) is a major cause of death following many operations (5). Low molecular weight heparin (LMWH) have been evaluated in several randomised

clinical trials and have been shown to be especially effective in preventing postoperative venous thromboembolism (6-9). Low dose subcutaneous heparin, intermittent pneumatic compression, and graduated elastic compression stocking are highly effective prophylactic methods in general surgical patients. All methods produce a risk reduction in thrombosis of approximately 70% (1,5,10,11). The number of studies demonstrated that no significant differences exist between LMWH types and standart heparin for the prophylaxis of postoperative venous thromboembolism (12-16). The main advantages of this LMWH in general surgery patients are that it is

Table 1. Thromboembolic Events

	Study	Control
Pulmonary emboly		
Fatal	1	4
Nonfatal	-	2
Deep vein thrombosis	8	19

administered in a more convenient way (13,17,18). In recent years, insertion of a caval filter has been used for the prevention of PE. But the results call for a restricted use of caval filters until benefit has been confirmed by prospective studies (2). Specificity and sensitivity of Doppler sonography which is used to diagnose DVT are higher than 95%. (19,20). A prospective study of emergency room patients presented pleuritic chest pain showed that lung perfusion scintigraphy had a 85% sensitivity and 37% spesifity in PE when compared with angiography (21).

Table 2. Risk Factors Relevant to ThromBoembolism

Risk factor	LMWH	Control
Previous DVT	3 (3.3%)	-
Previous myocardial infarction	4 (4.4%)	3 (3.2%)
Malignancy	39 (42.8%)	36 (40.4%)
Varicose veins	16 (17.9%)	14 (15.7%)
Chronic respiratory disease	7 (7.9%)	9 (10.1%)

Materials and Methods

From March 1995 to October 1996, 180 elective major abdominal operations were performed. A major abdominal operation was defined as an abdominal procedure which was performed under general anesthesia, was expected to last more than 30 minutes and required hospitalisation for at least 6 days. Ninety-one patients received daily one dose (0.3 ml) LMWH (Fraxiparine) preoperatively and once daily for 7 days postoperatively (study group) and 89 patients received 0.3 ml saline solution in a same manner (control group). All patients were performed low extremity Doppler sonographic examination preoperatively and at 7th postoperative day if clinical signs were absent. The patients with clinical signs were examined earlier with Doppler sonographic examination. Lung perfusion scintigraphy was performed in the patients with a suspicion of pulmonary embolus. The main exclusion criteria were; allergy for heparin; documented bleeding tendency; pregnancy; and use of drugs interfering with coagulation. There was no difference in surgical procedure, type of anesthesia, or duration of surgery between the two groups. The patients were followed during 4 weeks postoperatively. Difference between two populations proportions test (z test) and Student's t test were used for statistical evaluation.

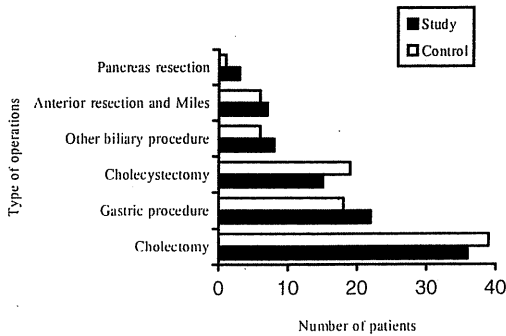
Results

There were 56 male (61.5%) patients in the study group (LMWH group) and 51 male (57.3%) patients in the control group. The mean age was 58.6 ± 15.7 years (range 41-86) in the study group and 54.4 ± 21.1 years (range 39-84) in the control group. There was no significant difference in age between the two groups ($p > 0.05$). There was no difference in surgical procedure, type of anesthesia, or duration of surgery between the two groups. There were PE in 6 patients and DVT in 19 patients in the control group. There was PE in 1 patient and DVT in 8 patients in the study group (Table 1). DVT was detected in 4 of 7 patients who had PE. Of patients who had PE, 4 had rectal carcinoma and 1 had gastric carcinoma. Of patients who had DVT, 6 had rectal carcinoma, 8 had colon carcinoma, 2 had gastric carcinoma and 2 had pancreas carcinoma. Fourteen of the patients (%41.2) who had DVT had malignancy. Distribution of the patients who had thromboemboli according to the disease groups is shown in Figure 2. There were wound hematoma in 6 patients (6.6%) in the study group and in 1 patients (1.1%) in the control group ($p < 0.05$). There were hemorrhage via abdomen drains of 2 patients (2.3%) in the study group. There were not hemorrhage via abdomen drains in the control group ($p > 0.05$). The youngest patient who had thromboemboli was 44 years old and there was a significant difference between those who had thromboemboli and who did not have in terms of mean age ($p < 0.01$). The other risk factors are shown in Table 2. The patient who had PE in the study group(1.1%), and 4 patients (4.4%) who had PE in the control group died because of thromboembolic complications ($p > 0.05$).

Discussion

Most surgical patients have a certain risk of developing postoperative venous thrombosis (1,22). For general surgery the incidence of thrombosis is 20 to 30% without prophylaxis (23). Over the past decade most clinical trial of LMWH have been carried out following various types of surgical operations, with the intention of preventing the thromboembolic complications. Many surgeons still harbour fears and doubts about using thromboprophylaxis. One of the most common fears is that of bleeding. But at doses recommended for prophylaxis, the risk of bleeding with LMWH is minimal (1,5,17,24). However, minor wound bleeding, hematoma or transfusion requirements after a succesful operation is preferable to death caused by a PE. The placebo-controlled studies demonstrated that the LMWH tested are very effective and safe (25,26). In our study, there are wound hematoma in 6 patients (6.6%) in the study

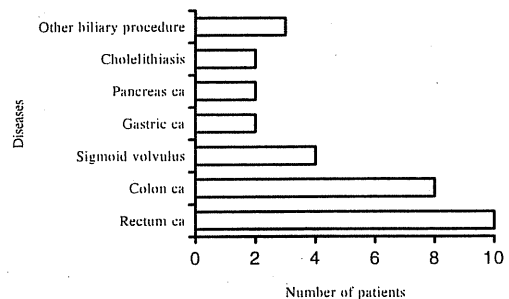
Figure 1. Operations



group and 1 patient (1.1%) in the control group ($p < 0.05$). There was hemorrhage via abdomen drains of 2 patients (2.3%) in the study group. There is any hemorrhage that require transfusion. There was not hemorrhage via abdomen drains in the control group ($p > 0.05$). Patients who recieved LMWH had an increase in postoperative wound hematomas and hemorrhage, compared to control, but no difference was detected in major bleeding. Many studies support this situation (14). Postoperative fatal pulmonary embolism is an infrequent complication after general surgery (2). Majority of PE arises from the deep veins of the pelvis and leg (27). The total incidence of postoperative PE is between 0.1% and 1% (5,12,28,29). Although effective prophylactics against PE have been known for many years, some surgical patients still develop PE despite thromboprophylaxis (12). Some authors demonstrated that the incidence of fatal PE is reduced by low-dose heparin prophylaxis (1,12). Collins et al (1) reported that heparin prophylaxis decreased PE at least 50%. On the use of LMWH for thromboprophylaxis, the incidence of symptomatic PE in patients undergoing general surgery was 1.7-2% (1,29). In our study, there were 6 patients with PE (6.7%) in the control group and 1 (1.1%) patient with PE in the study group. In patients undergoing major general surgery have shown that the incidence of DVT was about 20 to 25% in patients who did not receive specific prophylaxis (1,5,17). Collins et al (1) reported that heparin prophylaxis prevented at least 68% of DVT. There are 19 patients (20.8%) with DVT in the control group and 8 (9.1%) patient in the study group in our clinic study. Thromboembolic complications were lower in the study group than the control group in our study ($p < 0.05$). An exponential correlation between age and thromboembolism was demonstrated. This risk

becomes appreciable after the age of about 40 years in the presence of major illness, trauma, or surgery (11,12,18). All of the patients who had PE and DVT were over 44 years in our study. There was a significant difference between those who had thromboemboli and who did not have in terms of mean age ($p < 0.01$). Malignancy and pelvic surgery imply a high risk of thromboembolism, even when prophylaxis is applied (12,30,31). Fourteen (41.2%) of the patients who had thromboembolic complication had malignancy. The risk of thromboembolism of patients with malignancy was statistically higher than those without malignancy ($p < 0.01$). Of 13 patients who had undergone pelvic surgery, 10 had thromboembolism ($p < 0.001$). Pezzuoli et al (25) randomized patients to either LMWH or placebo. These authors reported a statistically significant reduction in thromboembolic mortality in venous thrombosis in favour of LMWH, 0.36% to 0.09%. Four patients (4.4%) were in the control group and 1 patient was (1.1%) in the study group who died because of PE ($p > 0.05$). Despite the administration LMWH and low-dose heparin, thromboembolism can not be verified in all of patients undergoing abdominal surgery (29,30). But in the light of our data, we recommended the use of a firm, routine thromboprophylaxis procedure by LMWH, particularly in the patients in over 40 years, or with pelvic dissection or malignancy.

Figure 2. Distribution Of the Patients Who Had Thromboemboli According to the Disease Groups



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