

Thursday, July 16, 1981

Poster Presentations

Heparin - V

Therapy

11:00-12:30 h

Kent Room Boards 137-147

0670

SUBCUTANEOUS HEPARIN THERAPY IN RENAL INSUFFICIENCY. W. Salzmann, K. Andrassy, E. Ritz, J. Koderisch, Medizinische Univ.-Klinik Heidelberg (FRG)

It is often necessary to treat uremic patients with low dose heparin therapy, e.g. for prophylaxis of Cimino-fistula thrombosis. However, little information is available on heparin pharmacokinetics and heparin action in uremic patients. In the present study, plasma activity time profiles during low dose heparin therapy were investigated in control individuals (CO) and in uremic patients (UP). Patients and methods: Heparin levels 0;3;8;10;12;24;27;32;34 and 36 h after s.c. injection of various doses of heparin (2x7.500 IU/day for 2 days; 3x5.000 IU and 2x5.000 IU each for 2 days) were measured in 9 control individuals and in 11 uremic patients (Ccr < 10 ml/min.). Heparin activity was determined by measurements of (1) neutralisation of factor Xa-activity (Denson and Bonnar); (2) neutralisation of Xa measuring amidolytic activity (Teien and Lie); (3) PTT and thrombin time. Heparin cofactor concentrations were measured with immuno-diffusion and by measuring amidolytic activity. Results: With the dose of 2x5.000 IU heparin s.c. no difference between CO and UP was found; in contrast, peak concentrations of heparin were significantly lower in UP after 7.500 IU heparin s.c. With the dose of 3x5.000 IU heparin s.c. there was a significant ($p < 0.05$) difference of heparin levels between CO and UP. This difference was even more pronounced after repeated administration of heparin; heparin levels in UP were markedly lower than in controls. The antithrombin III levels did not change significantly during the study. Conclusion: The results show that in order to reach a given profile of heparin activity, higher s.c. doses of heparin must be administered in uremic patients than in non-uremic controls.

0671

SUBCUTANEOUS HEPARIN FOR PROPHYLAXIS FOR RECURRENT THROMBOEMBOLISM. J.A. Caprini, C.J. Thorpe, S.J. Torkelson, J.P. Vagher, A.Z. Delos Reyes, and J. Mitchell. Evanston Hospital and Northwestern University Medical School, Evanston, IL.

One hundred consecutive patients with thromboembolic disease were treated with subcutaneous heparin to prevent recurrence of deep venous thrombosis (70 patients), pulmonary embolus (21), or both deep venous thrombosis and pulmonary embolus (9). Thrombosis was documented by venography, doppler ultrasound, impedance plethysmography, V-P lung scanning, or pulmonary angiography. The hospitalized patients received intravenous heparin for an average of 12.3 days. Intravenous heparin was overlapped with the first dose of 5000 units of subcutaneous heparin which was then given every 12 hours. Fifteen patients had the subcutaneous dosage increased before discharge and 52 had changes in dosage at some point during therapy according to test results. Subcutaneous heparin therapy averaged 111 days per patient (range - 15 days to 16 months). No episodes of major bleeding occurred, although 5 patients had minor localized ecchymosis or rash. Self-injection was well accepted and tolerated by the patients. Clinical examination, hematocrit platelet count, prothrombin time, activated partial thromboplastin time, fibrinogen, fibrin split products, and thrombelastography were performed every six weeks. Doppler and impedance plethysmography studies were repeated if clinical signs persisted or recurred. Two patients had recurrent nonfatal deep vein thrombosis 3 months after starting subcutaneous heparin therapy. Both of these patients originally had above knee thrombi.

The results suggest that self-administered subcutaneous heparin injections titrated to laboratory tests are effective in preventing recurrent thromboembolism without bleeding complications. This approach represents an effective alternative to oral anticoagulant therapy.

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PROPHYLAXIS OF POSTOPERATIVE THROMBOEMBOLISM: LOW DOSE HEPARIN VERSUS HEPARIN PLUS DIHYDROERGOTAMIN. H. Vinazzer, W. Simma, E. Dienstl and P. Brücke. First Department of Surgery General Hospital, Linz, Austria.

In a randomized study on surgical patients, the antithrombotic efficacy of 5,000 I.U. heparin given subcutaneously in 8-hour intervals (LDH) was compared to 5,000 I.U. heparin plus 0.5 mg dihydroergotamin given subcutaneously in 12-hour intervals (LDH+DHE). Prophylaxis was started two hours preoperatively and was maintained until the patients were completely mobilized but for a minimum of one week. Patients of both sexes and of over 40 years of age undergoing major abdominal elective surgery were admitted to the study. Two groups of 100 patients each were formed. The groups were comparable by age, sex, weight, type of surgery, and number of risk factors. Thrombosis was diagnosed by the 125I-fibrinogen uptake test. In all cases of thrombosis, an additional perfusion scintigraphy of the lungs was carried out. There was a total of 35% of thromboembolic events in the LDH-group. Out of these, thrombosis was only detectable by the increase of radioactivity in 29% whilst in 6% also clinical signs of thrombosis were observed. One patient of this group died from pulmonary embolism. In the LDH+DHE group, thromboembolic events were found in 12%. In these patients, thrombosis was only detected by the increase of radioactivity with the exception of one case who also developed clinical signs of thrombosis. No pulmonary embolism was found in this group. Bleeding complications were observed in 8% of the LDH group. One of these patients required blood transfusions. In the LDH+DHE-group, increased bleeding was observed in 4% but transfusions were not required. These results speak in favour of the combined prophylaxis, even when intervals between injections are longer than in exclusive heparin prophylaxis.