Once-daily regimens Vs. Twice-daily regimens of low molecular weight heparin in high bleeding risk patients and non-high bleeding risk patients.

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Introduction:

In general, a prophylactic dose of heparin prevents developing venous thrombosis. When patients are not anticoagulated, life-threatening embolization can occur shortly after ICU. Thus, anticoagulant therapy should be initiated immediately. The dosage and duration of initial anticoagulation differ from agent to agent. Low molecular weight heparin (e.g., Enoxaparin) is used in our ICU patients. 2 different regimens in 2 different patient groups were studied; once-daily regimens in high bleeding risk patients and twice-daily regimens in non-high bleeding risk patients.

Aims:

This study aims to assess which 2 regimens are more effective in 2 different groups.

Materials/Methods:

The patients who stayed in ICU for more than 3 days were evaluated (N=22). The patients were divided into 2 groups; Once-daily regimens (40mg s.c) in high bleeding risk patients such as brain trauma, stroke, or cranial bleeding and twice-daily regimens (40mg s.c x 2) in non-high bleeding risk patients such as various types of infections or sepsis. Ultrasound was used to prove whether there was any developing thromboembolism in femoral, subclavian, and jugular veins in all studied patients. 2 groups were compared mainly by the presence of thromboembolism, anti-Xa, d-dimer, anti-thrombin level, and other parameters.

Results:

Thromboembolism was not found in the once-daily regimens group (N=8). On the other hand, 2 patients developed thromboembolism in the twice-daily regimens group (N=14). There were no significant difference in anti-Xa (p-value = 0.2437), d-dimer (p-value = 0.8185), and anti-thrombin (p-value = 0.0758).

Conclusion:

Once-daily regimens heparin was efficient in high bleeding risk patients when comparing 1) anti-Xa, d-dimer, anti-thrombin levels, and 2) there was any ultrasound-proven thromboembolism in all studied patients. However, twice-daily regimens in non-high risk bleeding patient were not sufficient in some patients, since 2 patients had ultrasound-proven thromboembolism. These patients possibly need to aim for higher anti-Xa levels up to the so-called “gray zone (0.4-0.6)” to decrease the risk of developing thromboembolism, whether the usage of once-daily regimens heparin in these patients requires future study.