The contrast research in safety and efficacy between nadroparin and dalteparin before elective percutaneous coronary intervention

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Background To evaluate the contrast research in safety and effective time between nadroparin and dalteparin before elective percutaneous coronary intervention (PCI) in Chinese population. Investigating the relationship among anti-Xa activities APTT and ACT, and if it help to use nadroparin and dalteparin.

Methods A total of 101 consecutive patients undergoing elective PCI were randomised to either nadroparin (50 cases) or dalteparin (51 cases) group for procedural anticoagulation. According to description, the patients in nadroparin or dalteparin group were given nadroparin (0.01 ml/kg) or dalteparin (120 IU/kg) subcutaneously more than 48 h twice per day before PCI. Serial plasma anti-Xa activities ACT and APTT were measured before and after nadroparin and dalteparin were injected. Then coronary angiography (CAG) and PCI was performed. Bleeding complications were classified according to Thrombolysis in Myocardial Infarction (TIMI) criteria. All patients were monitored for anticoagulation before and after PCI and adverse events (ie, death, myocardial infarction, demands for revascularization) 30 days after PCI.

Results 101 patients were completed. 1. The proportion, plasma anti-Xa activities of patients in nadroparin or dalteparin group above 0.5 IU/ml, exceeded 92% after 4 h subcutaneous injection. The proportion descended to 74% and 56% in nadroparin group after 8 h and 12 h, 54.9% and 25.5% in dalteparin group, which descend more, but had no significantly difference compared with nadroparin group. After 24 h and 48 h, the proportion of plasma anti-Xa activities of patients in both groups are above 0.5 IU/ml, achieved steady state and exceeded 96.0%. 2. The plasma anti-Xa activities hardly correlated with ACT, and have no difference in Statistics (nadroparin group p=0.075, dalteparin group p=0.093). 3. There were no adverse events in 30 days, and no significantly difference about bleeding events (6.0% vs 9.9%, p=0.05) between the two groups.

Conclusion The subcutaneous injection of nadroparin or dalteparin for anticoagulation in patients before elective PCI is safe and effective. Anticoagulation effects can be maintained for at least 8 h. ACT can response to the anticoagulation effects of nadroparin or dalteparin by subcutaneous injection. ACT cannot response to the effective anticoagulation effects of nadroparin or dalteparin by subcutaneous injection.