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Effect of simultaneous use of air lock and injection duration on ecchymosis extension and pain intensity associated with subcutaneous heparin injection.

Thesis for the master's degree
Medical-surgical education trend

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Abstract:

Title: effect of simultaneous use of air lock and injection duration on ecchymosis extension and pain intensity associated with subcutaneous heparin injection.

Background: Bruising and pain are the most common complications of heparin administered by subcutaneous injection, resulting in limited areas, anxiety, disturbance of body image, refusal of treatment by patient and reduce the effectiveness of nurse-patient trust. Although various methods have been proposed to minimize this unwanted effects but so far none of these methods has not been able to effectively reduce the adverse effects. The aim of this study was to compare the effects of air locks and duration of pain and bruising caused by the subcutaneous heparin injection.

Methods: this Quasi-experimental study, done on 35 patients that treated with subcutaneous heparin in ICU, CCU, emergency and cardiology wards in Imam Khomeini hospital in Tehran. For each patient, two injections of 10 seconds without the use of an air lock (the usual method), and 30 seconds with the use of airlock (case study method) were carried out in the abdomen on the right or left, randomly. The interval between injections was 12 hours. Bruising 24 and 48h after injection was measured using a plastic ruler and pain was measured using the VAS scale immediately and 24 hours after injection.

Results: Size of the bruises caused by the injections in study method, significantly less than the size of the bruises were caused by injection in the usual method (p=0.0). Average size of the bruises in the usual method at 24 and 48h after injection of subcutaneous heparin were 1.791 and 1.817 respectively, and 0.854 in study method. Pain intensity immediately after injection in study method was significantly less than it in usual method (p=0.004). Difference in pain intensity in two method 24 hours after injections was not significant, although average of pain intensity in study method was less than pain in usual method.

Conclusion: Due to the dramatic reduction in size of the bruising and pain caused by subcutaneous injection of heparin, looking to increase the injection time and the use of airlock in order to improve the quality of care and minimize unpleasant and stressful experience for patients, increasing the injection duration to 30 seconds and use an airlock heparin subcutaneous injection is recommended.

Keywords: subcutaneous heparin, airlock, injection duration, ecchymosis, pain intensity.