

2000 Nov;82(6):428-31.

## Delivery of low molecular weight heparin for prophylaxis against deep vein thrombosis using a novel, needle-less injection device (J-Tip).

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### **Abstract**

Given daily, low molecular weight (LMW) heparins are established for prophylaxis against deep vein thrombosis (DVT). We describe delivery by a novel, needle-less device that is virtually painless in action. Its use could provide benefits for patients in terms of comfort both psychologically and physically, and for healthcare workers in terms of safety from needle-stick injury. Patients undergoing elective surgery received LMW heparin delivered subcutaneously by either a standard needle and syringe or by the needle-less injection device, J-Tip. Pain was scored at the time of injection and plasma anti-factor Xa levels compared between the two methods of drug delivery 4 h later: 29 patients received LMW heparin delivered by the J-Tip and 31 patients by standard needle and syringe. The J-Tip was significantly more comfortable for the patient as the method of drug delivery ( $P < 0.001$ ). When delivered by the J-Tip, LMW heparin was equally as efficacious, as plasma anti-factor Xa levels were similar for both methods of delivery ( $P < 0.42$ ). In summary, delivery of LMW heparin by the J-Tip device was both comfortable and effective. These findings, taken in conjunction with its ease of use and complete freedom from risk of needle-stick injury might encourage further examination and use of this type of product.

PMID: 11103165 [PubMed - indexed for MEDLINE]PMCID: PMC2503472Free PMC Article