Early Versus Delayed Prophylaxis for Deep Vein Thrombosis Prevention in Pelvic-Acetabular Trauma: A Prospective Study

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Purpose: Delayed presentation of pelvic-acetabular fractures is a common scenario in developing countries and there is usually a delay of more than 24 hours in their presentation. Our null hypothesis is that early administration of low molecular-weight heparin (LMWH) within 24 hours of injury is better than late administration after 24 hours for deep vein thrombosis (DVT) prophylaxis in pelvic-acetabular fractures. Secondary aims were to report incidence and various risk factors of DVT in pelvic-acetabular fractures.

Methods: All patients of pelvic-acetabular fractures presenting between January 2017 and December 2017 were included and divided into 3 groups. Group A included patients who received LMWH prophylaxis within 24 hours of injury. Group B included patients who received LMWH prophylaxis after 24 hours of injury. Patients who had contraindications for DVT prophylaxis constituted group C and received no prophylaxis. All patients underwent CT venography at day 14 and were followed up with Doppler ultrasound on 4th and 8th week. Incidence of DVT and various risk factors were evaluated.

Results: 171 patients (56 acetabulum fractures, 92 pelvis fractures, and 23 combined injuries) were included. 4 out of 29 patients in group A (13.8%), 12 out of 81 patients (14.8%) in group B, and 18 out of 61 patients (29.5%) in group C developed DVT. There was no significant difference in DVT between groups A and B ($P = 0.893$). Incidence of DVT was significantly high in group C in comparison to group A ($P = 0.011$), group B ($P = 0.034$), and combined groups A + B ($P = 0.019$). The various risk factors positively associated with pelvic-acetabular fractures in development of DVT are fracture type (transverse + posterior wall), Kocher-Langenbeck approach, lateral decubitus position, associated spine injury, more than 1 associated nonorthopaedic injury, ISS >15, and injury to surgery time >10 days. Surprisingly there was no significant difference in DVT incidence between surgically managed and conservatively managed patients ($P = 0.225$).

Conclusion: The null hypothesis is rejected. There was no significant difference between early prophylaxis and delayed prophylaxis with respect to occurrence of DVT. However, giving prophylaxis is more important as it decreases the incidence of DVT.