

Effect of Intraoperative Tranexamic Acid on Postoperative Changes of Serum Interleukin 6 Levels in Elderly Male Patients With Intertrochanteric Fracture

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Purpose: Our objective was to examine the impact of intraoperative tranexamic acid on early postoperative interleukin-6 (IL-6) levels in elderly male patients with intertrochanteric fractures, with a focus on those with osteoporosis, and to suggest new therapeutic directions for inflammation control in this patient group.

Methods: A retrospective analysis was conducted on 92 elderly male patients with intertrochanteric fractures who underwent surgery from January 2020 to December 2022. Patients were categorized into four groups based on the use of tranexamic acid during surgery and the presence of osteoporosis: Group A (no tranexamic acid, no osteoporosis, n = 32), Group B (no tranexamic acid, osteoporosis, n = 14), Group C (tranexamic acid, no osteoporosis, n = 32), and Group D (tranexamic acid, osteoporosis, n = 14). Serum IL-6 levels were measured on postoperative days 1, 3, 5, and 7. Intraoperative blood loss, postoperative complications, and 1-year mortality were also recorded.

Results: No significant differences were observed in baseline characteristics (age, smoking history, drinking history, body mass index [BMI], comorbidities, laboratory indicators, and intraoperative blood loss) among the four groups ($p > 0.05$). Patients with osteoporosis had higher intraoperative blood loss. On postoperative days 1 and 3, IL-6 levels were significantly higher in Group B than in Group A ($p < 0.05$). However, in Group D, IL-6 levels were significantly lower than in Group B ($p < 0.05$). No significant differences in IL-6 levels were noted on postoperative days 5 and 7. The incidence of in-hospital complications was 28.1% in Group A, 35.7% in Group B, 18.8% in Group C, and 21.4% in Group D. One-year mortality rates were 15.6%, 28.6%, 12.5%, and 14.3% for Groups A, B, C, and D, respectively. Patients with osteoporosis (Groups B and D) had higher rates of in-hospital complications and 1-year mortality, while those treated with tranexamic acid (Groups C and D) had lower rates, although these differences were not statistically significant ($p > 0.05$).

Conclusion: Intraoperative tranexamic acid effectively reduces early postoperative IL-6 levels in elderly male patients with intertrochanteric fractures, particularly in those with osteoporosis.