

Diagnostic value of serum procalcitonin compared with c-reactive protein for postoperative wound infection of surgically treated trochanteric fracture

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INTRODUCTION:

Because of the high prevalence of postoperative infection and its impact on mortality and morbidity in patients undergoing orthopedic and nonorthopedic procedures, a reliable marker for the diagnosis of infection would be of great importance. There has been an increasing use of procalcitonin (PCT) measurements in identifying systemic bacterial infections. This study was carried out to investigate the value of serum PCT level versus the C-reactive protein (CRP) in the diagnosis of postoperative inflammatory response with or without sepsis after trochanteric fracture surgery in the elderly.

METHODS:

The study was carried out in El-Hadara University Hospital on 60 American Society of Anesthesiologists physical status I and II patients aged above 50 years scheduled for peritrochanteric hip fracture surgery [dynamic hip screw (DHS), dynamic condylar screw, gamma nail, cemented bipolar, cemented Thompson, and Austin Moore]. Blood samples for PCT, CRP, and white blood cells (WBCs) were drawn on day 0 (preoperatively) and days 1, 3, 5, and 7 postoperatively. The samples were collected at the same hour in the morning for each patient.

RESULTS:

The age ranged from 65.0 to 90.0 years with a mean of 77.0 ± 8.66 years. There were 15 (25.0%) male and 45 (75.0%) female patients. Ten (16.7%) patients underwent cemented bipolar operation, 28 (46.7%) patients were treated with DHS, and four (6.7%) were treated with cemented Thompson, and 18 (30.0%) were treated with gamma nail. In the studied group, 15 (25%) patients had proven local wound sepsis on culture and sensitivity performed on day 3, and 45 (75%) patients were not infected. There was a significantly higher difference in the infected ones than in the noninfected ones as regards WBCs, PCT, and CRP changes. In the infected group seven (46.7%) patients were treated with DHS, four (26.7%) with cemented bipolar, two (13.3%) with cemented Thompson, and two (13.3%) were treated with gamma nail.

DISCUSSION AND CONCLUSION:

We could conclude that PCT is an earlier and more specific marker of wound infections compared with CRP or WBC count after trochanteric fractures in the elderly.