

Serum C-Reactive Protein Concentration Is Not An Adequate Parameter For Detecting Early Surgical Site Infections Following Idiopathic Or Non-Idiopathic Scoliosis Surgery

Orthopaedics / Spine / Miscellaneous

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Background

Surgical Site Infection (SSI) is a severe complication of scoliosis correction surgery. Monitoring of serum markers together with clinical status in the early postoperative period helps to detect SSI after total joint arthroplasties. There is no reliable data that would support monitoring of C-reactive protein (CRP) after scoliosis surgery to predict early SSI.

Objectives

The aim of this study was to analyze the postoperative CRP serum concentration in the early postoperative period in patients with and without early SSI after scoliosis surgery.

Study Design & Methods

The study was a retrospective analysis of the prospectively collected data of patients undergoing scoliosis surgery in a single orthopaedic centre. 358 consecutive patients who underwent scoliosis surgery between 2014 and 2024 were enrolled in the study. Patients were divided into 2 groups: (1) idiopathic scoliosis (IS 268 patients) and (2) non-idiopathic scoliosis (NIS 90 patients). CRP was analyzed twice postoperatively: postoperative days (POD) 2 and 4 or 3 and 5. CRP was compared between the patients with or without SSI within the groups. The rise or drop of CRP between the postop days 2 and 4 or 3 and 5 was noted.

Results

Overall early SSI rate was 3.9% (IS – 2.2%, NIS – 8.8%). There were 9 deep and 5 superficial SSIs. There were no statistically significant differences in CRP between patients who developed SSI and those who did not. Only 2 patients with SSI (sensitivity: 14%) presented with a rise of CRP in POD 4.

Conclusions

The rate of early SSI after scoliosis correction surgery was 3.9%, 2.2% in the IS group, and 8.8% in N-IS. Serum CRP concentration in patients after scoliosis surgery revealed negligible value in the prediction of early SSI. The diagnosis of SSI should be based mainly on clinical manifestation.