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 Abstracttitel: Persistent increase of C-Reactive Protein levels after cardiac surgery might predict deep sternal wound infection

Purpose: C-Reactive Protein (CRP) is a non-specific inflammatory marker which increases in response to a variety of insults including cardiopulmonary bypass (CPB) and cardiac surgery¹. We have previously reported typical CRP behaviour following uncomplicated coronary artery² and valve³ surgery and now examined whether the post-operative CRP values differ in patients who go on to develop deep sternal wound infection. **Methods:** We examined the records of 3499 consecutive cardiac surgical patients from our centre between 2003 and 2005 using a predefined statistical analysis. We identified patients with all the relevant data on post-operative days 2,3, and/or 4, and then constructed the following clinically relevant summary statistics for each patient: the maximum CRP, failure of CRP to fall on day 3 and failure to fall on day 4. We then looked for associations between these summary statistics and post-operative infection and 30 day mortality. **Results:** 1309 patients had sufficient CRP datasets for post-op days 2, 3, 4 to allow us to delineate a fall or rise on day 4. These patients did not differ from those with missing data with respect to age, sex, date of surgery, Euroscore, or Parsonnet Score. There was no association with peak CRP, or failure of CRP to fall on Day 3 for any of the predefined outcomes. Association between the failure for CRP to fall on Day 4 and outcome is described in Table 1. Persistent CRP increases on post-op day 4 produce an absolute risk increase of 4.1% (95%CI 0.3–7.9) for deep sternal wound infection from a baseline of 1.0%.

CRP behaviour on Day 4	Rise (Cases/Total)	Fall (Cases/Total)	Risk Ratio (95% CI)	P value
Deep Sternal Wound Infection	9/154	20/1155	3.8 (1.6-7.3)	0.001
30 Day Mortality	7/154	23/1155	0.9 (0.9-1.0)	0.05

Conclusion Interpretation of this data should be limited to hypothesis generation due to the problems with its retrospective nature and missing samples. However, a persistent increase of CRP on post-operative day 4 after cardiac surgery might help identify patients developing deep sternal wound infections.

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