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2.2. DIAGNOSIS: BIOMARKERS

Author: Maja Babic

QUESTION 1: Are there any diagnostic tools that are useful for early surgical site infection (SSI) detection following spinal surgery? Does this differ whether or not there was instrumentation?

RECOMMENDATION: C-reactive protein (CRP) can be used to diagnose early SSI following spinal surgery.

A failure of CRP to decline or a second rise on postoperative days four to seven is a sensitive marker for infection following spine surgery, including both instrumented and non-instrumented spine surgery.

LEVEL OF EVIDENCE: Moderate

DELEGATE VOTE: Agree: 86%, Disagree: 7%, Abstain: 7% (Super Majority, Strong Consensus)

RATIONALE

In a prospective study of 73 consecutive patients undergoing spinal decompression with and without instrumentation, inflammatory markers were assessed. They showed that following uncomplicated spinal surgery, CRP levels rise sharply, peaking on the second postoperative day [1]. Peak CRP values after instrumented lumbar surgery are significantly higher than those after non-instrumented spine surgery, but decline with the same half-life [1]. CRP was superior to erythrocyte sedimentation rate (ESR) in early detection of infections after cervical spine surgery, as shown in a prospective study of 51 cases [2]. In another large, prospective trial including 400 elective discectomy cases, CRP was shown to be a reliable, simple and economical screening test for infectious complications after lumbar

microdiscectomy, superior to classical laboratory parameters. The sensitivity of serial CRP testing was calculated to be 100% with 95.8% specificity. ESR and white blood cell measurements fail to reach distinctive significance in diagnosing early SSI [3].

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