Procalcitonin ratio indicates successful surgical treatment of abdominal sepsis.

BACKGROUND: On-demand relaparotomy has been associated with a slightly decreased mortality compared to planned relaparotomy in the surgical treatment of secondary peritonitis. On-demand relaparotomy must be performed without delay to detect progressing sepsis early, before the onset of multiorgan failure. The aim of the study was to evaluate procalcitonin (PCT) as a parameter for early detection of progressing sepsis after operative treatment of the infective source. METHODS: In 104 consecutive patients with secondary peritonitis, PCT serum levels were monitored on postoperative days 1 and 2 after initial operative elimination of the septic focus. The PCT ratio between postoperative days 1 and 2 was calculated and correlated to the success of the initial intervention. The latter was considered inadequate if relaparotomies were necessary to eliminate the intraabdominal infection. RESULTS: Using classification and regression tree analysis, a cutoff could be calculated at 1.03 for the PCT ratio of postoperative day 1 to day 2. Lesser values indicated unsuccessful elimination of the septic source, whereas values above 1.03 represented successful operative treatment of the septic focus. Unsuccessful treatment of the septic process could be detected with a specificity of 63% and a sensitivity of 95%. CONCLUSION: The PCT ratio appears to be a valuable aid in deciding if further relaparotomies are
necessary after initial operative treatment of an intraabdominal septic focus.