

# 16P

## Intestinal Fatty Acid Binding Protein (I-FABP) for the Detection of Strangulated Mechanical Small Bowel Obstruction

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**HYPOTHESIS:** Intestinal fatty acid binding protein (I-FABP), a protein released by necrotic enterocytes, is a useful marker for the detection of ischemia from mechanical small bowel obstruction.

**DESIGN:** A validation cohort.

**SETTING:** An academic medical center.

**PATIENTS:** A cohort of 21 patients admitted with a diagnosis of mechanical small bowel obstruction. Plasma and urine samples were collected from patients upon hospital admission and again immediately before laparotomy if operative intervention was performed.

**MAIN OUTCOME MEASURES:** Plasma and urine I-FABP levels (pg/mL by enzyme-linked immunosorbent assay) in patients found to have small bowel necrosis at the time of laparotomy, compared with patients without significant ischemia upon laparotomy and patients who did not require laparotomy and by default did not have small bowel ischemia. A positive test was defined as 100 pg/mL I-FABP in plasma and 1,000 pg/mL I-FABP in urine.

**RESULTS:** Small bowel necrosis was confirmed in 3 of 21 enrolled patients. Plasma I-FABP levels were positive in 3 of 3 patients with necrosis and 3 of 18 patients without necrosis (sensitivity, 100%; specificity, 83%; PPV, 50%; NPV, 100%). Urine I-FABP levels were positive in 3 of 3 patients with necrosis and 2 of 18 patients without necrosis (sensitivity, 100%; specificity, 88.9%; PPV, 60%; NPV, 100%).

**CONCLUSIONS:** Intestinal fatty acid binding protein is an accurate marker for small bowel necrosis in mechanical obstruction. It is a promising potential solution to guide therapy in what are often difficult clinical scenarios. Additional work should be done to validate I-FABP in a variety of clinical settings and to develop a rapid I-FABP laboratory assay.