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Plasma levels of intestinal fatty-acid binding protein (I-FABP), abdominal distension and hydrogen concentration after lactitol small intestinal bacterial overgrowth (SIBO) test

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Dear Editor,

Breath tests with glucose, lactulose or lactitol are useful for the diagnosis of small intestinal bacterial overgrowth (SIBO). Nevertheless, they have suboptimal sensitivity and specificity and in fact, are present in a considerable number of patients with
irritable bowel syndrome (IBS) (1). The complexity in the management of patients with functional intestinal disorders and the availability of these tests are leading to frequent diagnoses of SIBO. Intestinal fatty-acid binding protein (I-FABP) is a protein present in the cytosol of intestinal epithelial cells. Its plasmatic levels have been related to different enteropathies and therefore, could be a marker of early intestinal damage with unconfirmed clinical utility (2). Hence, the plasmatic I-FABP level of patients who had a lactitol test to confirm SIBO were studied and related to clinical and laboratory characteristics and SIBO test results. To that end, plasma samples were obtained from 20 consecutive patients who underwent the lactitol test from November 2022 to January 2023. The plasma I-FABP levels were determined (ELISA) and further compared with clinical data including Rome IV criteria for IBS (3), pain, distension, bowel score and quality of life measured with the IBS severity scale (IBSSS) (4), anxiety and depression (HAD scales) (5), laboratory values up to six months before (hemoglobin, serum iron, folic acid, vitamin B12, C-reactive protein and fecal calprotectin) and the concentrations of hydrogen and methane in expired air after taking 10 g of lactitol. Figure 1 shows the association of I-FABP with gender, abdominal distension and total concentration of hydrogen. Plasmatic I-FABP values were not related with the age, Rome IV criteria, abdominal pain, bowel score and quality of life measured with IBSSS, HAD scales score, laboratory values, diagnosis of SIBO, concentration of hydrogen in the first 90 or methane concentration. Although we are aware of the reduced sample size, the association between I-FABP and abdominal distension must be highlighted. Despite the fact that the 13 patients with a positive lactitol test had high methane production, neither SIBO test positivity nor methane concentrations were associated with higher I-FABP values. In the event these results are confirmed with a larger number of patients, I-FABP could be a marker of abdominal distension, which could help to explain its pathophysiology, characterization and treatment.

References


Fig. 1. I-FABP plasmatic level is associated with: A) gender of the patients, 2.3 (2.1) vs 4.0 (3.1), p = 0.046; B) current abdominal distension, 3.8 (3.2) vs 1.0 (2.6), p = 0.050; C) severity of the distension, R = 0.381, p = 0.097; and D) sum of the hydrogen concentrations throughout the 175' duration of the SIBO test, R = 0.481, p = 0.035. Variables are expressed with medians and interquartile range. Mann-Whitney U test and Spearman’s correlation.