Abstract

Background/aim: Smooth muscle antibody (SMA) specific for the protein actin, a major component of the cytoskeleton of epithelial cells, is one of the most prevalent non-organ specific autoantibodies in the serum of celiac disease (CD) patients. Our aim was to explore the clinical relevance of the presence of IgA type antiactin antibody (AAA) and SMA in a series of patients with CD.

Methods: We evaluated frozen serum samples collected at diagnosis from 92 adult patients with CD and 52 control individuals in whom CD was excluded. Patients were re-evaluated a median time of 5 yr after treatment. IgA type AAA was detected using a modified commercial ELISA assay and IgA SMA was detected using indirect immunofluorescence on primate esophagus substrate. Results: At diagnosis, samples from CD patients had significantly higher AAA values than controls (p<0.00001). While all active CD patients had serum AAA values over the cut-off for healthy controls, we observed a very significant reduction of these antibodies after treatment (p>0.0001). AAA had a highly significant correlation with both, tissue, transglutaminase (r=0.62) and antigliadin (r=0.60,p<0.00001) antibodies as well as the severity of the intestinal injury (p<0.05). SMA was detected in sera of 35 consecutive CD patients. At diagnosis, SMA positive patients had significantly higher values of AAA (p<0.0002), increased number of autoimmune disorders (p<0.04), delayed menarche (p<0.04), lower hemoglobin levels (p<0.01), increased fecal a-1 antitrypsin clearance (p<0.01) and more severe diarrhea (p<0.06). We also detected a trend to more severe complications at follow-up (p=0.059). Conclusions: Based on our findings we suggest that the presence of increased IgA AAA serum levels is a highly sensitive marker of the disturbed architecture of intestinal epithelial cells of CD patients with a potential relevance to diagnosis and follow-up. The presence of SMA seems to define a distinct subset of CD patients with a more severe clinical outcome.

Keywords

Celiac disease, autoimmunity, anti-actin antibodies, smooth muscle antibodies, gluten-free diet.