FALK SYMPOSIUM 46

Inflammatory Bowel Diseases – Basic Research and Clinical Implications

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Significance of autoimmune reactions to pancreatic juice in Crohn's disease

W. STÖCKER, M. OTTE AND P. C. SCRIBA

Autoantibodies to exocrine pancreas (Pab) have been detected by indirect immunofluorescence in sera of patients with Crohn's disease (CD). High titres were frequent in CD, but could neither be recorded in ulcerative colitis nor in healthy subjects[1]. Pab in CD were as conspicuous as autoantibodies to intestinal goblet cells (Gab) in ulcerative colitis (UC) and other autoantibodies in proven autoimmune diseases. The possible implication of pancreatic immunity in the pathogenesis of CD was discussed[2]. Results of additional studies enhance the significance of these observations.

The association of Pab with CD could be verified by examination of new, larger collectives consisting of 150 patients with CD, 164 patients with UC and 100 healthy control persons (Co)[3]. Pab were predominant in CD (CD 35%, UC 2%, Co 0%). High Pab-titres were only detectable in CD (1:100 or higher in 30% of 150 patients). On the contrary, Gab were confirmed to be an exclusive marker for UC (CD 0%, UC 26%, Co 0%).

The prevalence of Pab and Gab was determined in the sera of the patients' family members[4] who are assumed to carry an elevated risk for developing chronic inflammatory bowel disease. Since none of 185 healthy appearing first degree family members exhibited Pab or Gab, these antibodies seem to be disease-specific and do not yet indicate a disposition for CD or UC.

It was possible to isolate the CD-related autoantigen from pancreatic juice. The antigen was shown to be a macromolecule different from functionally active trypsin, chymotrypsin, amylase and lipase, and it could neutralize Pab of each positive CD-serum[5].

The autoimmune reactions in CD differed fundamentally from those observed in disorders of the pancreas: Pab were rare in chronic (2 of 51) and acute (3 of 26) pancreatitis, their titres were low and did not exceed 1:32, they consisted only of IgA (CD: IgG or IgG + IgA) and could not be neutralized by the CD-related autoantigen[6].

A number of sera contained Pab or Gab with only one type of light chains, kappa or lambda. This uneven distribution speaks in favour of an oligoclonal

antibody response and possibly indicates that the corresponding autoimmune reactions are phenomena of primary significance—a secondary immunization against pancreatic or goblet cell antigens in the course of CD or UC seems to be excluded[7].

In Crohn's disease, the bowel may have developed a state of hypersensitivity against a physiologically occurring component of pancreatic juice. Pancreatitis is not predominant in CD since the bulk of autoantigens comes into contact with the immune system only outside the pancreas. As with other autoimmune diseases, the cause of sensibilization cannot yet be explained, and further investigations are required to completely reveal the etiology of CD.

Determination of Pab is of great diagnostic value. In combination with Gab, they permit the diagnosis of CD or UC in one third of patients with chronic inflammatory bowel disease.

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