

Autoantibodies to islet amyloid polypeptide in diabetes.

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Islet amyloid polypeptide (IAPP) is the constituent peptide of amyloid in pancreatic islets of Type 2 diabetic patients and in insulinomas. Amyloid formation in Type 2 diabetes is associated with islet cell destruction which may promote formation of autoantibodies to IAPP. An ELISA method has been developed to detect IAPP autoantibodies and used to assay serum from 80 non-diabetic subjects, 49 Type 1 and 228 Type 2 diabetic patients, and 10 patients with insulinomas. Microtitre plates coated with IAPP 1-37 were used to detect antibody binding followed by an alkaline phosphatase conjugated anti-human IgG. ELISA binding decreased with sample dilution and with pre-incubation of the samples with IAPP. The optical density of the substrate reaction was compared with results from a standard serum from a non-diabetic subject (OD ratio). Elevated OD ratios were detected in some subjects from each patient group but the Type 2 diabetic group had significantly higher titres than the non-diabetic subjects (p less than 0.001). The OD ratio was elevated (greater than mean + 2SD non-diabetic group) in 15% of Type 2 and 18% of Type 1 diabetic patients and in 20% with insulinomas. IAPP antibody levels did not correlate with age or gender of subjects, or duration of diabetes. IAPP autoantibodies could be an additional marker for B-cell damage in diabetes.