Deposition of complement C3c, immunoglobulin (Ig)G4 and IgG at the basement membrane of pancreatic ducts and acini in autoimmune pancreatitis.

Abstract: Autoimmune pancreatitis (AIP) is a type of pancreatitis whose immunopathogenesis is still unknown. It has been reported that renal biopsy specimens from patients diagnosed with both AIP and tubulointerstitial nephritis reveal deposits containing complement C3, immunoglobulin (Ig)G and IgG4 at the tubular basement membranes (BM). The aim was to investigate the deposition of complement and immunoglobulins in pancreatic tissue from AIP patients compared to non-AIP patients. Double immunofluorescence microscopy for C3c, IgG4 and IgG together with CK7, trypsin, collagen IV, CD31 and CD79a, as well as immunofluorescence microscopy for C1q, IgA and IgM, were performed on frozen pancreatic tissue from AIP and alcoholic chronic pancreatitis (ACP) patients. In AIP patients, complement C3c, IgG4 and IgG were deposited at the collagen IV-positive BMs of pancreatic and bile ducts and of acini. In a minority of the ACP patients, weak C3c-positive BM deposits were detected, but no IgG4- or IgG-positive BM deposits were present. The deposition of C3c, IgG4 and IgG at the BM of small- and medium-sized ducts and acini of the pancreas is characteristic of AIP. This suggests that immune complex-mediated destruction of ducts and acini play a role in the pathogenesis of AIP.