

The relationship between CD205/CD163 coexpression of macrophages and the histologic features in type 1 autoimmune pancreatitis.

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Objective:

In type 1 autoimmune pancreatitis (AIP), dendritic or spindle-shaped CD163+ macrophages proliferate in every anatomical compartment involved in the pancreas. CD205 is also expressed in some CD163+ macrophages, which appears to be specific for type 1 AIP, although the positivity and intensity for CD205 vary in each case. We aimed to investigate the correlations between staining intensities for CD205 and the histological features in order to clarify the role of CD205/CD163-coexpressing macrophages.

Methods:

We included 13 resected specimens of type 1 AIP. Immunostaining was performed for CD163, CD205. IgG4 and CD163/CD205 double-immunostaining was performed in 9 cases. For each pancreatic compartment (lobules, peripancreatic adipose tissue, interlobular ducts), we rated the amount or degree of the following findings using a three-point scale (grade 0-3); lymphoplasmacytic infiltration, CD163-positive macrophages, CD205-positivity in CD163-positive macrophages, and CD205-intensity. For each compartment, the average number of IgG4-positive cells was determined by counting 10 high-power fields. For lobular lesions, the amount of residual acinar cells was assessed. Interlobular lesions were evaluated in terms of the maximum width of the interlobular area, and the amount of lymphoplasmacytic infiltration. In 2 cases, interlobular ducts were not identified.

Results:

The number of CD205+ and CD163+ macrophages were proportionate in the peripancreatic adipose tissue and interlobular ducts, but not in the lobules, in which there was instead a correlation between the number of CD205+ macrophages and the degree of lymphoplasmacytic infiltration. There was a correlation between the number of IgG4+ plasma cells and CD205+ macrophages in the interlobular ducts and lobules, but not in the adipose tissue. High grade CD205-positivity was seen in the adipose tissue, interlobular ducts, and lobules in 7, 7, and 8 cases, respectively. Although most cases with high grade CD205-positivity revealed strong intensity, 1/7 cases in the adipose tissue and 2/8 cases in the lobules showed weak intensity. In the adipose tissue, the degree of CD205-intensity correlated with that of interlobular widening and interlobular lymphoplasmacytic infiltration. In the lobules, the degree of intensity correlated with the amount of acinar cell reduction. In the interlobular ducts, all 7 cases with high grade CD205-positivity showed a high CD205-intensity. CD205-expression was correlated with interlobular widening and interlobular lymphoplasmacytic infiltration.

Conclusions:

Although the findings differed between the anatomical compartments, dendritic or spindle-shaped CD163+macrophages seemed to be active in instances of CD205-coexpression. Intense CD205-expression may especially play an important role in disease progression by setting off the expansion of interlobular lesions or acinar cell damage.