The Use of Immunohistochemistry for IgG4 in the Diagnosis of Autoimmune Pancreatitis: A Systematic Review and Meta-analysis

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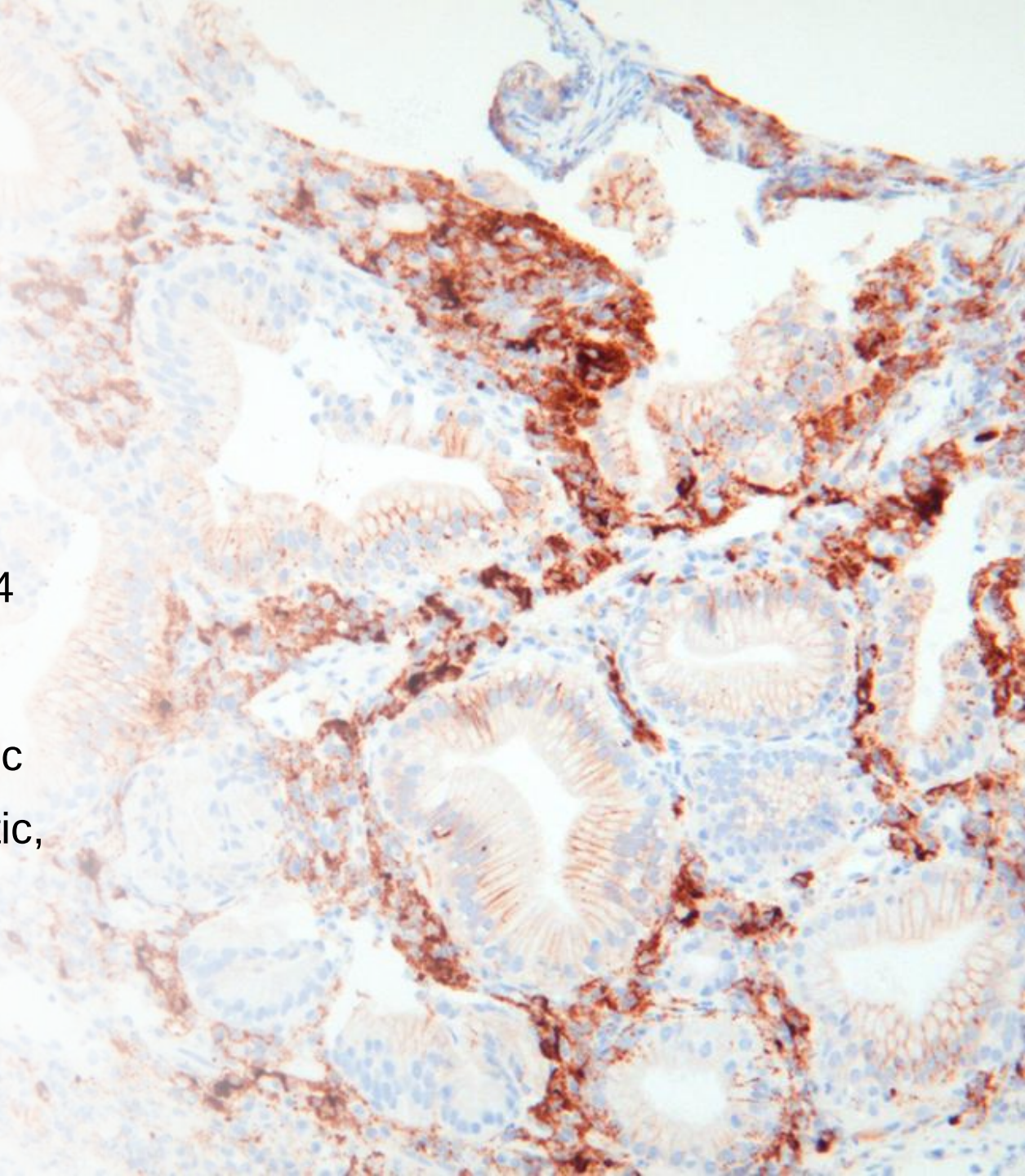
Declaration of Interest

The authors have no conflicts of interest.

Background and Aim

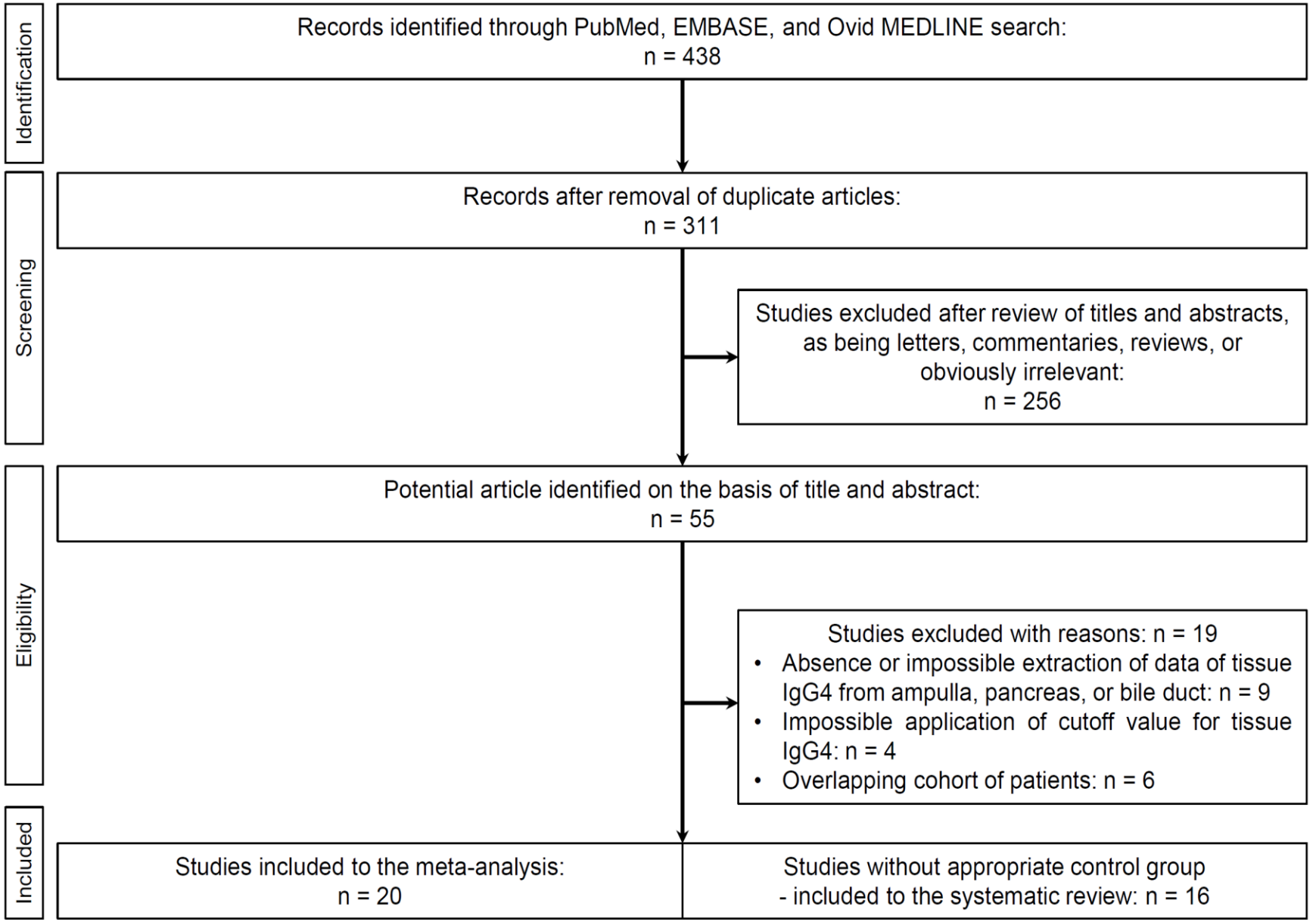
1. The diagnosis of autoimmune pancreatitis (AIP) remains challenging, especially when serum IgG4 is normal or imaging features are indeterminate.
2. The aim of this study was to assess the diagnostic performance of IgG4 immunostaining of pancreatic, biliary, and ampullary tissues in the differential diagnosis of AIP.

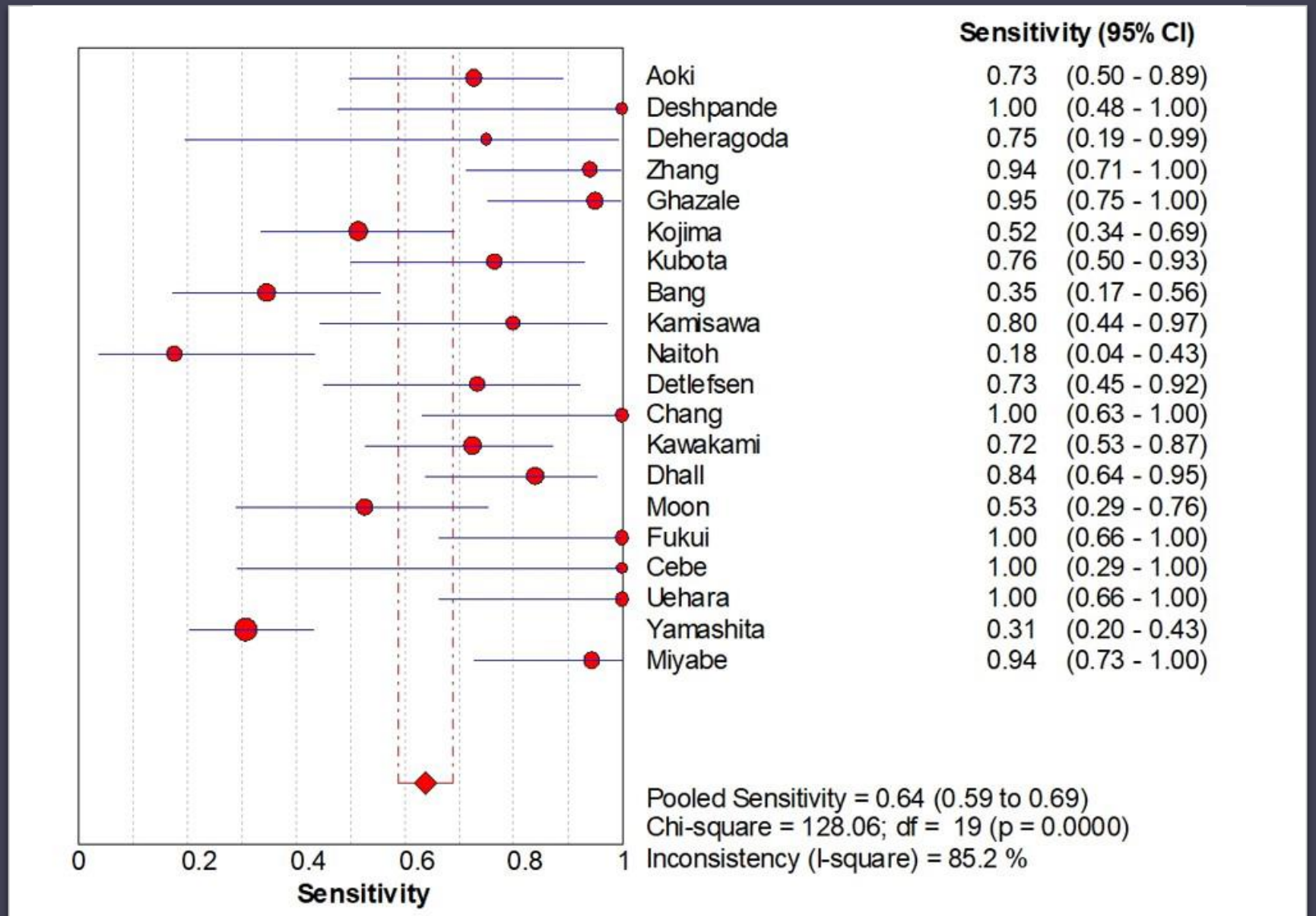


Material and Methods

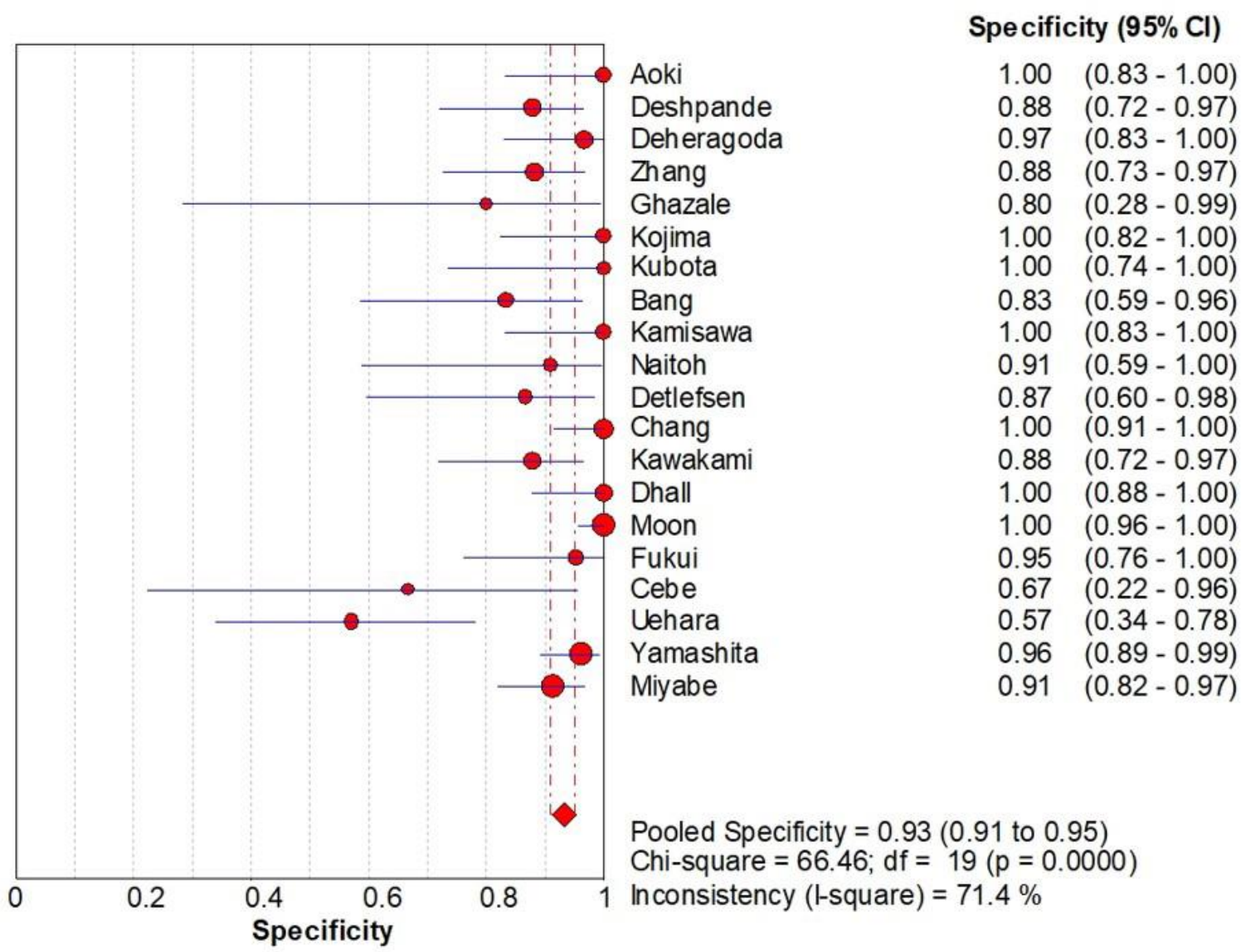
- A comprehensive literature search, using the PubMed, EMBASE, and Ovid MEDLINE databases
- Search terminology: (“autoimmune pancreatitis” or “lymphoplasmacytic sclerosing pancreatitis”) and (“IgG4 immunostaining” or “tissue IgG4”)
- Inclusion criteria: (1) studies providing detailed diagnostic criteria for AIP; (2) studies providing tissue IgG4 obtained from pancreas, bile duct, or ampulla; (3) studies providing the cut-off value for tissue IgG4; and (4) studies providing sufficient data to construct 2-by-2 tables

Study flowchart





Pooled sensitivity



Pooled specificity

Meta-regression for potential source of heterogeneity

Factors	RDOR	p value	95% CI
Subtype of AIP (type 1 AIP *vs.* AIP without subtyping)	2.69	0.218	0.54-12.37
Control group (pancreatobiliary cancer *vs.* oCP)	1.22	0.772	0.29-5.10
Sampling site (pancreas *vs.* bile duct/ampulla)	2.44	0.245	0.52-11.53
Sampling method (surgery *vs.* biopsy)	5.27	0.024	1.29-21.51
Counting method (1 HPF *vs.* ≥ 3 HPF)	0.73	0.777	0.07-8.02

RDOR, relative diagnostic odds ratio; CI, confidence interval; AIP, autoimmune pancreatitis; oCP, other chronic pancreatitis; HPF, high power field.

Conclusions

- IgG4 immunostaining of pancreatic, biliary, and ampullary tissue exhibited high specificity but moderate sensitivity for diagnosing AIP. Therefore, IgG4 immunostaining may be useful for supporting a diagnosis of AIP when AIP is clinically suspected, but the combination of imaging and serology does not confirm the diagnosis.