SUPPLEMENT

Sirtl et al. A machine-learning based decision tool selecting patients with idiopathic acute pancreatitis for endosonography to exclude a biliary etiology

Use of the terms "sludge" and "microlithiasis" in the context of the study

Unfortunately, due to a lack of unifying definition of biliary sludge and microlithiasis it is currently impossible to assess the risk of sludge and/or microlithiasis as cause of acute pancreatitis. In the absence of clear evidence guideline suggest to treat those patients with cholecystectomy and maybe biliary sphincterotomy. The definitions of the entities "biliary sludge" and "biliary microlithiasis" were taken from the endoscopic reports during the retrospective data evaluation and were not re-evaluated due to the current lack of an accepted unifying definition. Due to the differences between the participating centers in the use and partial equation of the two terms biliary sludge and microlithiasis, sludge-triggered pancreatitis was subsumed as biliary AP caused by microlithiasis. Even after extensive literature research we were unable to delineate a uniform but distinct definition of biliary microlithiasis and sludge. We thus decided to use the terms as synonyms between the endoscopy centers of the three participating university hospitals. This might impose a significant bias. Likewise, the patient cohort declared as Other-AP in terms of etiology varied greatly between the participating centers (**Supplementary Table 1**). Ultimately, this probably reflects the individual diagnostic scope and the question of whether endosonography can generate added value in the context of the individual patient.

Supplementary Table 1 Distribution of non-microlithiasis (Other-AP) patients according to underlying etiologies by respective centre. Listed are the respective non-biliary microconcrement-triggered acute pancreatitis of the patients who received an endosonography in the course of the diagnostic work-up, located under the encroachment "Other-AP". IgG4 levels were determined in 52% of idiopathically classified AP patients, each without evidence of elevation suggestive of underlying

autoimmune pancreatitis. Imaging evidence of autoimmune pancreatitis was accordingly not found in the idiopathic-AP cohort.

Etiology	**LMU Munich**	**TU Munich**	**Göttingen**
Idiopathic	90/171 (52.6 %)	17/51 (33.3 %)	10/30 (33.3 %)
Alcoholic	13/171 (7.6 %)	31/51 (60.8 %)	1/30 (3.3 %)
Macrolithiasis	26/171 (15.2 %)	0/51 (0 %)	16/30 (53.3 %)
Acute on chronic	37/171 (21.6 %)	0/51 (0 %)	0/30 (0 %)
Tumor	0/171 (0 %)	3/51 (5.9 %)	0/30 (0 %)
Hypertriglyceridemia	1/171 (0.6 %)	1/51 (1.9 %)	0/30 (0 %)
Drug-induced	0/171 (0 %)	1/51 (1.9 %)	1/30 (3.3 %)
Autoimmune	1/171 (0.6 %)	0/51 (0 %)	1/30 (3.3 %)
Hyperparathyreodism	1/171 (0.6 %)	0/51 (0 %)	1/30 (3.3 %)
Anatomical	1/171 (0.6 %)	2/51 (3.9 %)	0/30 (0 %)
Hereditary	1/171 (0.6 %)	0/51 (0 %)	0/30 (0 %)
Post-ERCP	0/171 (0 %)	0/51 (0 %)	1/30 (3.3 %)