APPENDIX 2 (online version only)

DATA RECORDING FOR CLINICAL MANAGEMENT AND CLINICAL RESEARCH STUDIES

Clinical Data

In addition to demographic and relevant clinical information (including etiology of pancreatitis), the interval between onset of abdominal pain and first admission to the hospital should be noted. Time of admission to hospital should be recorded. For the purpose of standardizing data, the first hospital day should be designated as day 1. In order to permit standardized reporting, day 2 should start at 8 AM on the following day and last for 24 hours. The presence of organ failure should be documented on each day through day 7. The interval from the onset of symptoms to the onset of persistent organ failure should also be documented. Data originating from a tertiary care hospital should be stratified to allow separate consideration of outcomes of patients who are transferred from other hospitals versus those who are admitted directly to the tertiary care hospital.

Risk factors and markers of severity

Several potential risk factors, markers of severity, and measurements related to the acute pancreatitis that may reflect severity should be recorded and evaluated prospectively, but these risk factors do not in themselves define severity (17,W1). Risk factors include comorbidities, age, and body mass index; markers of severity at admission or within the first 3 days include APACHE II scores and other scoring systems (W2,W3,W4,W5), pleural effusion or

pulmonary opacities on chest radiography, and serum levels of C-reactive protein (CRP) (9,W6). C-reactive protein is one of the most highly studied and valuable serum markers, but increases in serum CRP levels have a delayed onset and are most predictive at 48-72 hours after onset of disease. Procalcitonin may be useful particularly for early identification of infected necrosis. Other markers of severity which have been used in clinical studies include CT severity index (17,19), modified CT severity index (17,W7), urinary concentration of trypsinogen activating peptide (TAP), hematocrit on admission (W8), BISAP score =/>3 (W9,W10), serial measurements of serum BUN (W11,W12) and creatinine (W13), and serum levels of lactate dehydrogenase (LDH), amyloid protein A, CAPAP-B, IL-6, and other markers of acute phase injury. Not all these markers are available for clinical use. It should be stressed that plasma or serum amylase and lipase activities, while important in the diagnosis of acute pancreatitis, are not of any clinical importance in defining the severity of acute pancreatitis; moreover, it is not necessary or useful to repeat these measurements every day (9,W6).

Radiologic Evaluation On CECT

Cross-sectional imaging usually with CECT is essential for the clinical management of pancreatitis in the late phase. Good management depends on systematic reporting of all abnormalities combined with close collaboration between clinician and radiologist. The framework shown in Table 5 will assist in complete reporting.

In addition to the diagnosis of interstitial edematous pancreatitis versus all three forms of

acute necrotizing pancreatitis, the radiologist should address the morphologic findings of:

A) Absence or presence of pancreatic parenchymal necrosis (perfusion defects) and, if present, the site(s) and extent (<30%, 30-50%, and >50%)

B) Characteristics of pancreatic and peripancreatic collections: location (either intrapancreatic or extrapancreatic), homogeneity and attenuation of the collection (i.e. presence of non-liquid components), presence/absence of a well-demarcated encapsulating wall, and presence/absence of extraluminal gas, such as “bubbles,” areas of loculations of gas collections, or gas/fluid levels (10,17,27)

C) Other related extrapancreatic findings, such as cholecystolithiasis, choledocholithiasis, dilation of the biliary tree, venous thrombosis/obstruction of the portal, splenic, and/or mesenteric vein(s) (+/- perisplenic, perigastric varices), arterial pseudoaneurysm, pleural effusion(s), ascites, and inflammatory-like involvement of peripancreatic organs-stomach, duodenum, small bowel, colon, spleen, kidney, and liver.

D) Other unrelated intraabdominal or intrathoracic findings

Together, the radiologist and clinician can, thus, classify the type of pancreatitis and its complications in the individual patient and plan appropriate management. A multidisciplinary approach in the care of these patients should lead to better overall outcomes.

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