BBUGSS Guidelines on SAP: Bullet Points

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Background

1. **Pancreatitis** – inflammation of the pancreas.
2. **Severity of Acute Pancreatitis**
    a. **Mild Pancreatitis (80%) –** absence of organ failure or local complications
    b. **Severe Acute Pancreatitis (20%)**
        i. Moderately severe is associated with organ failure (<48 hours) and/or local (WOPN/Pseudocyst) or systemic complications
        ii. Severe is associated with persistent organ dysfunction (>48 hours)
3. **Natural History of local complications**
    a. Interstitial oedematous pancreatitis → <4 weeks; 30-40% develop acute pancreatic fluid collection (APFC); 90% resolve → >4 weeks; 10% form Pseudocyst
    b. Necrosis → <4 weeks; 90-100% develop Acute necrotic collections (ANC) → >4 weeks; 60% develop walled-off pancreatic necrosis (WOPN); 30% will become infected and 25% will resolve
4. **Symptoms –** patients present with abdominal pain, typically epigastric radiating to the back, nausea, vomiting and pyrexia.
5. **Aetiology** – most commonly due to gallstones or alcohol in the UK.

Predictors of Outcome

6. Classically assessed using **Glasgow-Imrie Score,** although it is a less accurate prognosticator compared to other methods.
7. Score ≥ 3 correlates with severe pancreatitis and referral for consideration of Level 2 or Level 3 care is warranted.
8. Mortality in reference to Glasgow-Imrie Score:
    - Score 0 – 2: 2% mortality
    - Score 3 – 4: 15% mortality
    - Score 5 – 6: 40% mortality
    - Score 7 – 8: >90% mortality

Glasgow-Imrie Score
$Pa0_2$ < 7.9 kPa
Age > 55 years
White Cell Count > 15 x 10^9/L
Calcium < 2 mmol/L
Urea > 16mmol/L
LDH > 600 IU/L
Albumin < 32 g/L (serum)
Blood Glucose > 10mmol/L

9. **Modified CT Severity Index (MCTSI) –** there is evidence of correlation between MCTSI and outcomes.

Pancreatic Inflammation	• 0: Normal pancreas • 2: Intrinsic pancreatic abnormalities with or without inflammatory changes in the peripancreatic fat • 4: Pancreatic or peripancreatic fluid collection or peripancreatic fat necrosis
Pancreatic Necrosis	• 0: None • 2: 30% or less • 4: More than 30%
Extrapancreatic Complications	• 2: One or more of: pleural effusion, ascites, vascular complications, parenchymal complications, and/or GI involvement
Score	• 0-2: Mild • 4-6: Moderate • 8-10: Severe

10. **EWS** is the preferred tool to assess severity of SAP and has been found to be one of the most accurate indicators of adverse outcome (measured at 24 hours) and mortality (measured at day 3).

Diagnostics

11. **Serum Amylase/Lipase** – 3 times upper limit of normal confirms diagnosis of acute pancreatitis.
12. **Urinary Amylase –** can be useful in delayed presentation i.e. after 48 – 72 hours when serum amylase may be normal or mildly raised.
13. **CRP** - useful in gauging severity of an attack and monitoring of both an acute episode and success of intervention. Peak level of CRP commonly occurs at 36 hours from presentation with SAP.
14. **Abdominal Ultrasound (US) –** used to determine presence of gallstones and/or biliary dilatation. US should be performed within the first 24 hours from admission.
15. **MRCP** – allows assessment of biliary tree, CBD stones and comprehensive evaluation of pancreatic anatomy (pancreatic divisum). Both MRI and EUS also have the capability of differentiating between solid and liquid collection.
16. **EUS –** allows for pancreatic biopsies for histological assessment, detection of ductal micro calculi and morphology of pancreatic duct.
17. **CT Abdomen** – gold-standard imaging modality to ascertain presence of pancreatic inflammation and local complications i.e. necrosis or peripancreatic collections. The main limitation is that it is often difficult to ascertain characteristics (solid/liquid) of the collection.

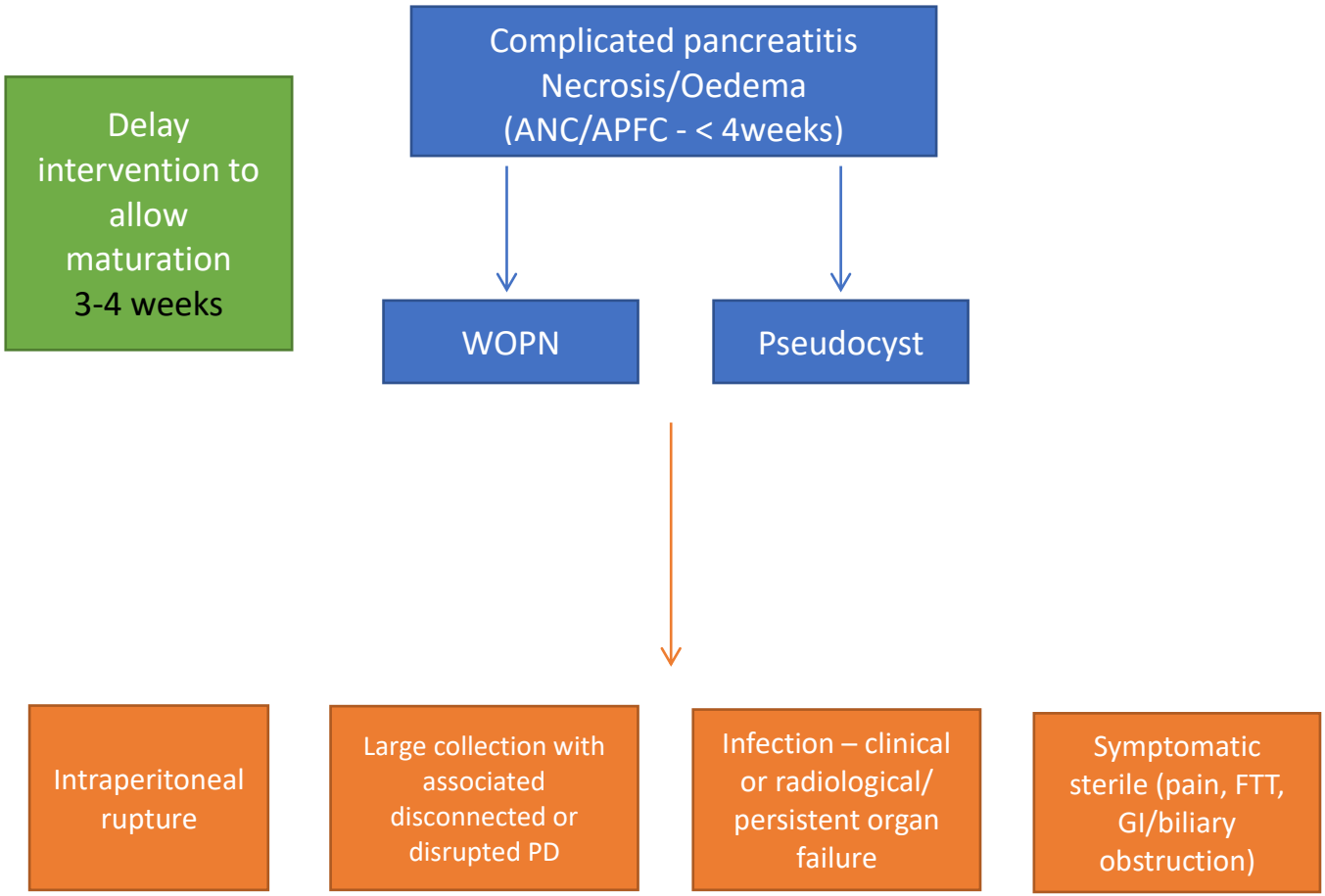
Therapeutics

18. **Medical Management** – Goal directed fluid resuscitation with input/output monitoring. Early nutritional support should be considered. No role for prophylactic antibiotics however, in the presence of local complications (WOPN/Pseudocyst), the use of antibiotics is warranted when infection is clinically suspected.
19. **Endoscopic** – ERCP should only be considered when concomitant cholangitis is present.
20. **Treatment** – Should follow MDT approach and is dependent on time of onset, patient's physiological state, anatomical location and characteristics (solid/liquid) of collections. Indications ***(Figure 1)*** for intervention include symptomatic sterile or infected collections. Type and rationale for interventions ***(Figure 2)***: -
    a. **Radiological** – Percutaneous drainage should be considered in collections maturing out to the flank. Following drainage, video assisted retroperitoneal debridement (VARD) may be required if the patient fails to improve or when the collections have a dominant solid component (Step-Up).
    b. **EUS guided placement of lumen apposing metal stents (LAMS) +/- transluminal pancreatic necrosectomy** – for drainage to retro-gastric liquid/solid collections.
    c. **Surgical** – Necrosectomy can be open or laparoscopic. Minimally invasive techniques are favored to reduce the insult and improve outcomes.
        i. Laparoscopic transgastric necrosectomy (retrogastric solid collections)
        ii. Laparoscopic infracolic necrosectomy +/- Roux en Y cystjejunostomy (infracolic solid/liquid collections)
        iii. When infracolic collections are drained without Roux en Y cystjejunostomy, patients can form pancreatic fistula in presence of pancreatic duct disruption/disconnection. This group of patients can have a laparoscopic fistula tract-jejunostomy at a 3-6 month interval.

Follow-up

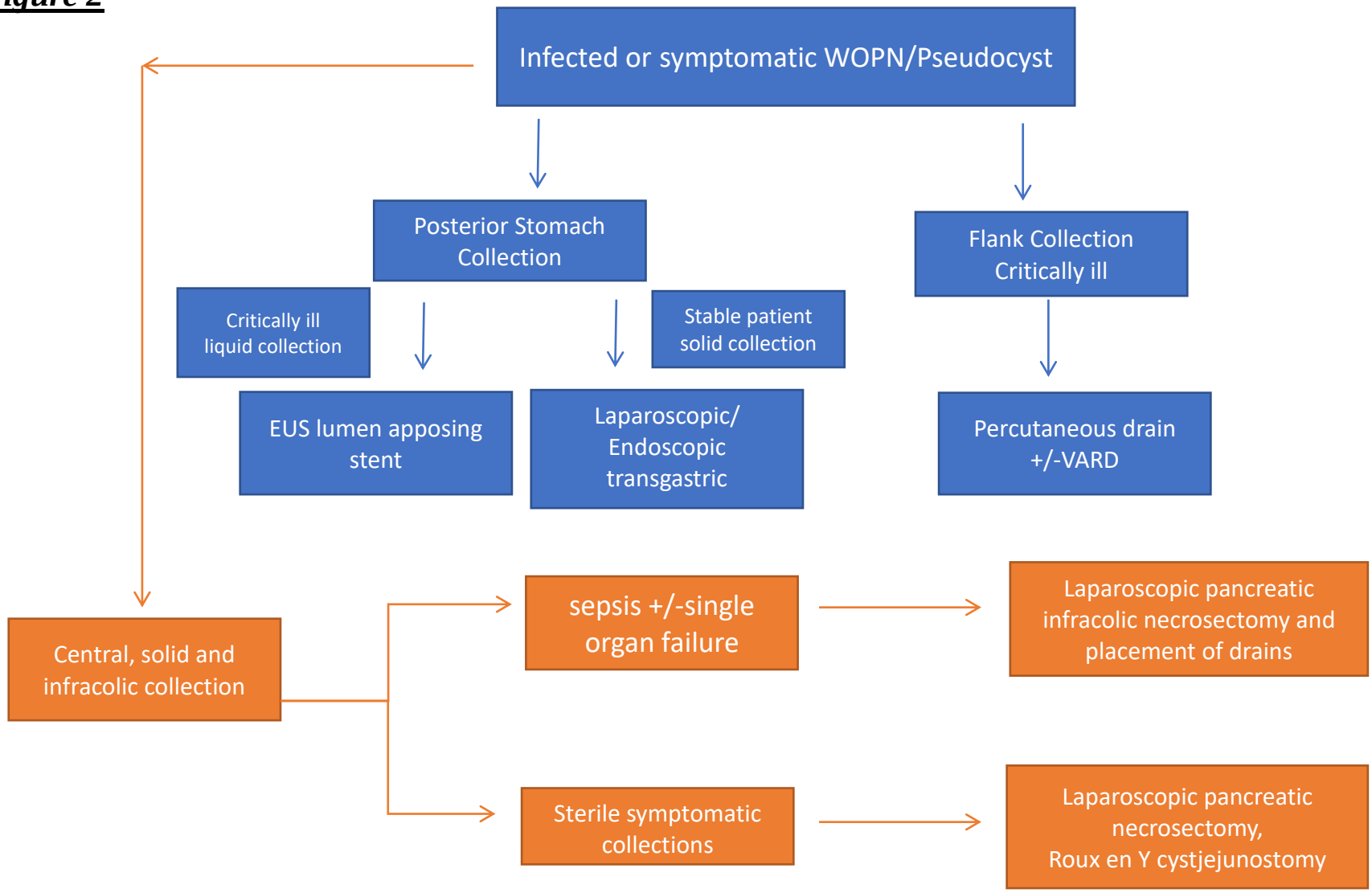
21. Severe necrotizing pancreatitis is life threatening condition and carries high risk of mortality (30-50%) if left untreated.
22. Fluid collections need follow up with interval scans to delineate progression or resolution in order to monitor need for endoscopic, radiological or surgical intervention.
23. Following treatment, it is known that 17% - 22% of patients will have recurrent pancreatitis and 8% - 16% will develop chronic pancreatitis.
24. A quarter of patients with acute pancreatitis develop diabetes, with the higher incidence reported in those patients with SAP.

Figure 1



Natural history of severe acute pancreatitis (blue boxes) and indications for pancreatic intervention (red boxes). ANC – Acute necrotic collection (<4 weeks), APFC – Acute pancreatic fluid collection, WOPN – walled-off pancreatic necrosis, EUS – endoscopic ultrasound, FTT – failure to thrive, PD – pancreatic duct

Figure 2



Preferred intervention pathway for Infected/symptomatic pancreatic collections pseudocyst/WOPN >4 weeks. Critically ill are patients with organ failure supported with inotropes and intubated in ITU. In such patients general anaesthesia and laparoscopy is not possible and less invasive techniques should be considered.