Patient Files

Lab results

Charts

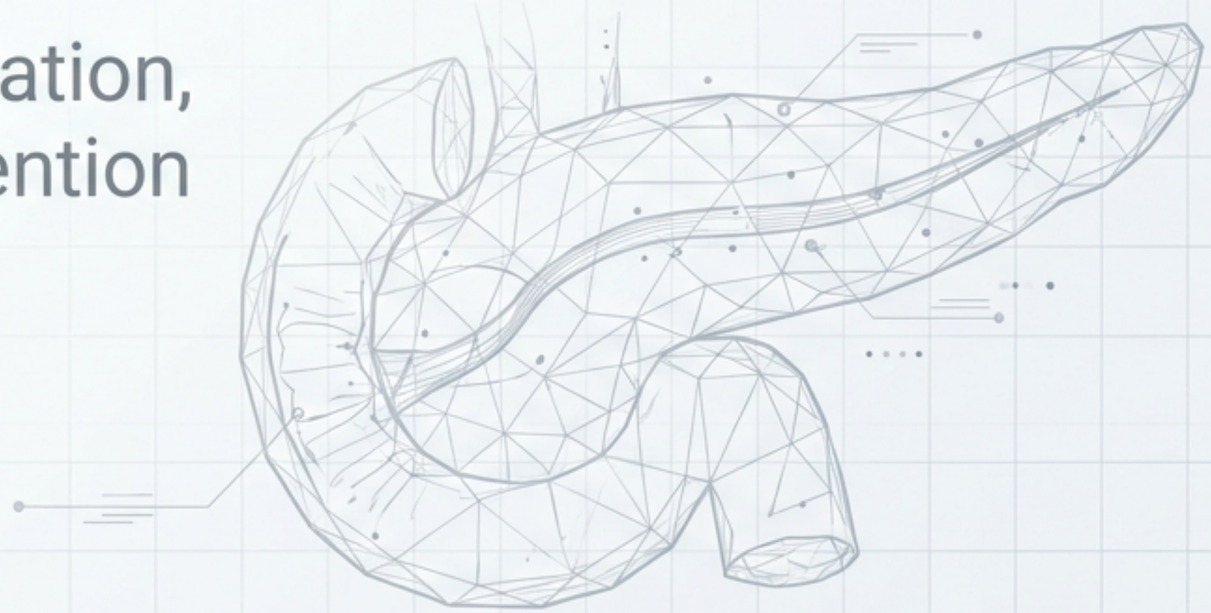
Notifications

Settings

Protocol Active: Acute Pancreatitis

Pancreatitis at the Primary Care Interface

Recognition, Resuscitation, and Recurrence Prevention



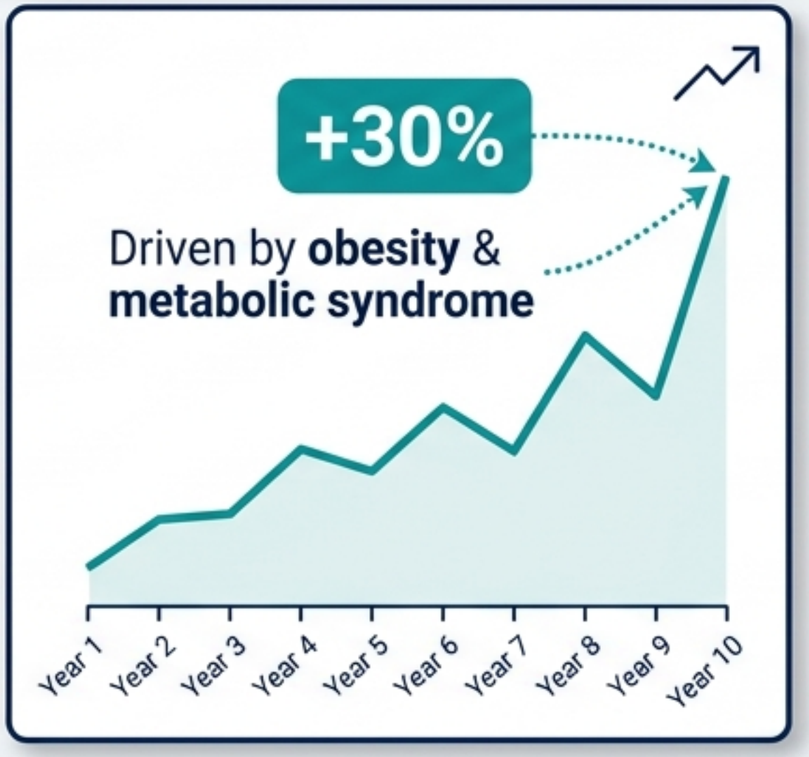
Clinical Reference Guide & Visual Triage Protocol

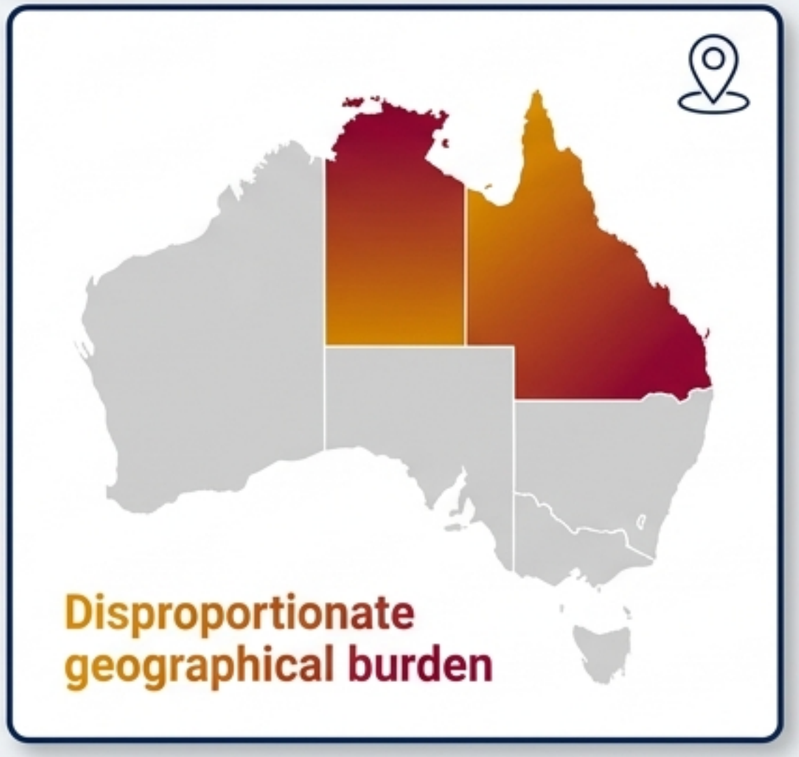
The Australian Pancreatitis Epidemic

Incidence: 30–40 per 100,000 population.

Mortality: 2–5% overall. Rises sharply with age and **Systemic Inflammatory Response Syndrome (SIRS)**.

Key Drivers: Rising gallstone disease, metabolic syndrome, and harmful alcohol consumption.





Convergent Pathophysiology: The Activation Cascade

Mechanical (Obstruction)

Migrating gallstones cause ductal hypertension and enzyme reflux.

Metabolic (Toxicity)

Ethanol metabolites and free fatty acids (>11.3 mmol/L) cause direct acinar cell injury.

Iatrogenic

Medications and post-ERCP trauma.

Premature Trypsinogen Activation

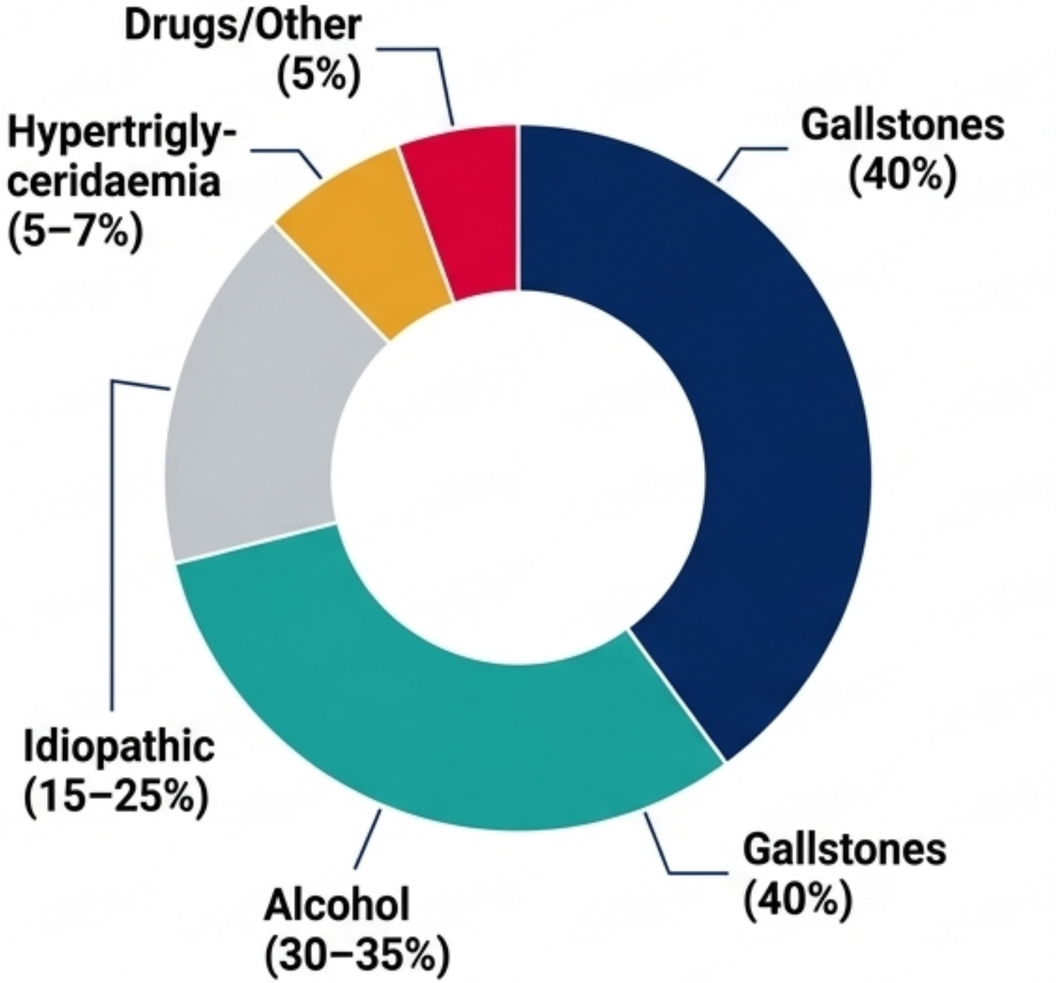
Local Autodigestion

Activation of elastase and phospholipase A2.

Systemic Inflammatory Response

Amplified NF-κB signalling.

Aetiology Profile Matrix: Identifying the Trigger



Gallstones (~40%)

Archetype: Female >40, obesity, Indigenous populations.

Note: Most common cause in Australia.

Alcohol (30–35%)

Archetype: Male 30–50, chronic heavy use (>50 g/day), binge drinking history.

Idiopathic (15–25%)

Archetype: No clear cause on initial workup.

Action: Requires further investigation for microlithiasis or genetic mutations.

Hypertriglyceridaemia (5–7%)

Archetype: Metabolic syndrome, uncontrolled diabetes.

Threshold: Fasting triglycerides >11.3 mmol/L.

Clinical Presentation & Diagnostic Criteria

Revised Atlanta Criteria

Requires 2 of 3

- [ ] **Clinical**: Acute onset of severe, constant epigastric pain (often radiating to the back).
- [ ] **Biochemical**: Serum lipase ≥3× the upper limit of normal.

  (Note: Lipase is preferred over amylase; more sensitive, specific, and remains elevated for 8–14 days).
- [ ] **Radiological**: Characteristic findings on cross-sectional imaging (CT, MRI, or Ultrasound).

Red Flags (Immediate Hospital Transfer)

- Haemodynamic instability (SBP <90 mmHg, HR >120 bpm)
- Signs of peritonitis or persistent vomiting
- Fever >38.5°C with rigors (suspect cholangitis or infected necrosis)
- Altered mental status or respiratory distress

Interface Investigations: The Initial Workup

Essential Bloods

Lipase: The gold standard. Diagnostic at ≥3× ULN.

FBC & UEC: **Hct >44%** or **BUN >8.2 mmol/L** predicts severe disease.

LFTs: **ALT >150 U/L** has 95% PPV for gallstone aetiology.

Calcium & Glucose: Derangements indicate severity.

CRP: **>150 mg/L** at 48 hours predicts necrosis.

Lipids: Fasting panel to check for triglycerides **>11.3 mmol/L**.

Targeted Imaging Sequencing

First-line: Transabdominal Ultrasound (<24h) to identify gallstones/dilated CBD.

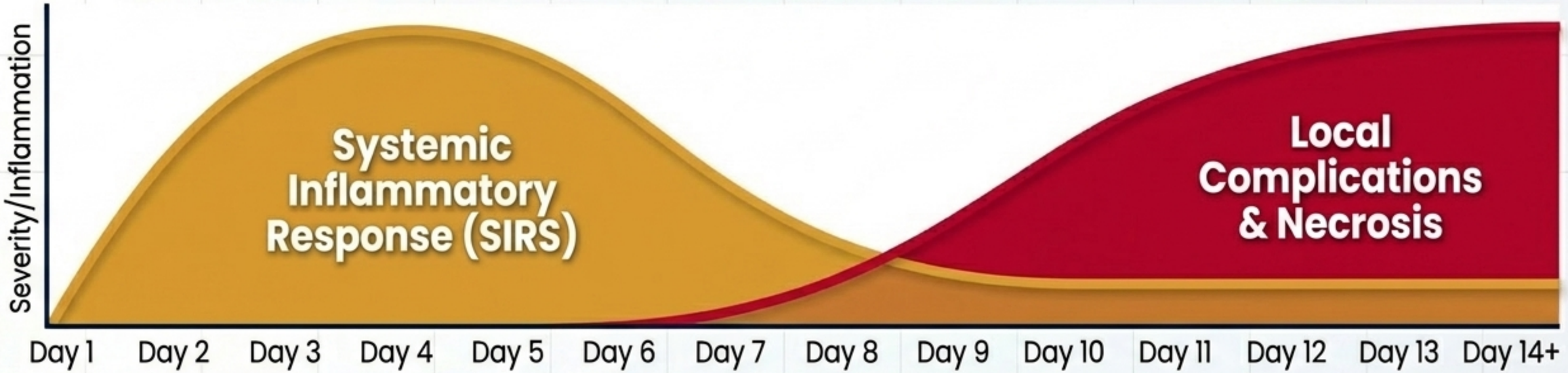
↓

Avoid: Early CT (<72h). Necrosis may not yet be evident.

↓

Specialist: MRCP or EUS for diagnostic uncertainty. ERCP reserved for therapeutic intervention.

The Two-Phase Model of Pancreatitis Severity



Phase 1: Early Phase (Days 1–7)

- **Mechanism:** Cytokine storm leading to SIRS.
- **Clinical Threat:** Organ failure (pulmonary, renal, cardiovascular).
- **Definition:** 'Transient' organ failure resolves <48 hours; 'Persistent' lasts ≥48 hours.

Phase 2: Late Phase (Days 7+)

- **Mechanism:** Local tissue damage evolving into structural complications.
- **Clinical Threat:** Pancreatic necrosis, pseudocysts, and walled-off necrosis.
- **Lethality:** Secondary infected necrosis is the leading cause of late mortality.

Severity Stratification: Forecasting Mortality Risk

Revised Atlanta Severity Tiers

Mild (~80%): No organ failure or local complications. Resolves 5–7 days.

Moderately Severe (~15%): Transient organ failure (<48h) OR local complications.

Severe (~5%): Persistent organ failure (≥48h). 20–36% mortality. Requires ICU.

BISAP Bedside Score (Calculate within 24h)

BUN >8.2 mmol/L (1 pt)

Impaired mental status (GCS <15) (1 pt)

SIRS present (≥2 criteria) (1 pt)

Age >60 years (1 pt)

Pleural effusion on imaging (1 pt)

Alert: Score ≥3 indicates high mortality risk (5–20%).

The First 24 Hours: Resuscitation Dashboard

Aggressive Fluid Resuscitation

(Single most important intervention)

Fluid: Lactated Ringer's preferred over Normal Saline (reduces SIRS).

Rate: 20 mL/kg bolus, then 3 mL/kg/hr goal-directed.

Caution: Avoid aggressive fluid overload in elderly/ cardiac/renal patients.

Nutritional Support

Key Practice Change

Action: Early oral feeding (low-fat solid diet) within 24 hours for mild cases.

Evidence: Prolonged fasting is outdated. Early feeding is safe, reduces stay, and prevents infections.

Avoid parenteral nutrition.

Clinical Targets

- Target BUN **<7.1 mmol/L**
- Target urine output **>0.5 mL/kg/hr**
- Target normalising lactate

Interface Analgesia & Antiemetic Selection Matrix

Note: Pain management is a priority. No evidence supports withholding opioids due to sphincter of Oddi spasm concerns.

Medication	Dose	Renal Adjustments	PBS Status
Paracetamol (First-line)	1g PO/IV QID. Max 2g/day if hepatic impairment.	No specific adjustment.	General
Morphine (Severe pain)	2.5–5 mg IV/SC Q4H.	Reduce 50% if eGFR 10–50; avoid in severe renal failure (metabolite accumulation).	Authority
Fentanyl (Renal Impairment)	25–50 mcg IV Q1-2H.	Preferred opioid in renal failure (no active metabolites).	Authority
Ketorolac (Adjunct)	10–30 mg IV. Short courses only.	Avoid if eGFR <30 or active GI bleed.	General

Antiemetic Selection

Ondansetron (Antiemetic) | 4–8 mg IV/PO Q8H | No renal adjustment required | PBS: General

Specific Acute Interventions & Escalation

Acute Intervention Required?

- **Gallstone Aetiology** →

Biliary Interventions

WITH Cholangitis/ Obstruction: Urgent ERCP + sphincterotomy within **24–72 hours**.

WITHOUT Cholangitis: Early laparoscopic cholecystectomy during same admission (reduces recurrences from **17% to 5%**).

- **Suspected Necrosis** →

Infection Management (Necrosis)

Prophylactic Antibiotics: Not recommended for sterile necrotising pancreatitis.

Indicated ONLY for confirmed/suspected infected necrosis (gas on CT, positive FNA). Start empiric **Carbapenem** (e.g., Meropenem 1g IV TDS).

- **Hypertriglyceridaemia** →

Metabolic/Tox Interventions

Triglycerides >11.3 mmol/L: Immediate insulin infusion ± heparin. Plasmapheresis if TG **>22.6 mmol/L**.

Post-Discharge Monitoring: The Primary Care Timeline

Addressing the Root Cause: Recurrence Prevention

Alcohol-Related

Goal: **Complete abstinence.** Even 1-2 drinks/day spikes recurrence risk.

Pharmacotherapy:
Naltrexone 50 mg **(Avoid in liver failure) OR**
Acamprosate 666 mg TDS (Avoid if eGFR <30).

Both **PBS Authority.**

Gallstone-Related

Goal: **Prevent further duct obstruction.**

Action: Ensure patient is on **surgical waitlist** if not performed during admission.

Alternative:
Ursodeoxycholic acid (Ursofalk) 8-10 mg/kg/day if unfit for surgery.

Hypertriglyceridaemia

Goal: **Target TG <1.7 mmol/L** (Absolute minimum <5.6).

Pharmacotherapy:
Fenofibrate 145/160 mg daily (First-line).
Icosapent ethyl (Vascepa) 2g BD for severe cases.

Dietitian referral essential.

The Continuum of Risk: Detecting Long-Term Sequelae

Acute pancreatitis is not just a localized event; severe or recurrent episodes precipitate chronic systemic organ failure.

Endocrine Sequelae: New-Onset Diabetes

Occurs in **15–25%** of patients post-acute episode (islet cell destruction).

Primary Care Action: Routine screening with HbA1c and fasting glucose at 6 weeks, 6 months, and annually.

Early endocrinology referral if insulin required.

Exocrine Sequelae: Pancreatic Exocrine Insufficiency (PEI)

Manifests as **steatorrhoea, weight loss,** and **fat-soluble vitamin deficiency** (acinar cell destruction).

Primary Care Action: Test Faecal Elastase (**<200 µg/g** indicates insufficiency).

Therapy: Initiate Pancreatic Enzyme Replacement Therapy (PERT) – Creon® 25,000–50,000 units per meal.

Equity in Care: Aboriginal and Torres Strait Islander Health

The Burden

2–3x higher hospitalisation rates, driven by higher prevalence of gallstones, metabolic syndrome/diabetes, and harmful alcohol use.

Systemic Barriers & Clinical Reality

Remote Access
Significant delays via RFDS or limited local transport.

Surgical Waitlists
Same-admission cholecystectomy is often impossible; remote patients face extended delays for definitive care.

Primary Care & Community Action Framework

Surveillance
Check TG levels in all presentations. Link pancreatitis follow-up with existing diabetes/renal programs at ACCHOs.

Culturally Safe Intervention
Engage Aboriginal Health Workers. Support community-led dry policies and residential rehab access.

Ensure MBS Item 715 health assessments track lipid and alcohol metrics.

Special Populations Modifier Grid

Population	Key Risks	Fluid/Analgesia Adjustments	Contraindications
 **Pregnancy**	Lipase preferred (Amylase physiologically elevated). **Ultrasound 1st line**.	**ERCP safe** with shielding.	**No fibrates/statins**. **Avoid NSAIDs** in 3rd trimester.
 **Paediatrics**	Genetic testing (PRSS1) if recurrent.	**Weight-based LR**. Early **enteral feeding** is safe.	**Avoid codeine** <12 yrs.
 **Elderly (≥65)**	**Mortality 10-15%**. Consider malignancy.	**Cautious fluids** (risk of pulmonary oedema). **Fit patients** should still get surgery.	N/A
 **Renal Impairment**	Amylase falsely elevated.	**Fentanyl preferred** over morphine.	**Fenofibrate contraindicated** if eGFR <15.
 **Hepatic Impairment**	Overlaps with alcoholic pancreatitis.	**Paracetamol** max 2g/day. **Use Acamprosate** for alcohol cessation.	**Naltrexone contraindicated** (hepatotoxic).

Drug-Induced Pancreatitis & Medication Review

Accounts for 2–5% of cases. Immediate cessation of the suspected agent is required. Document as an ADR.

Definite Risk (Class Ia)

Immunosuppressants: Azathioprine, 6-mercaptopurine (Rechallenge carries 60-100% recurrence risk; permanent cessation required).

Antiepileptics: Valproate.

HIV NRTIs: Didanosine, stavudine.

Probable Risk (Class II)

GLP-1 Agonists: Exenatide, liraglutide, semaglutide (Weeks to years latency).

Diuretics/5-ASAs: Thiazides, furosemide, mesalazine.

Possible Risk (Class III)

Statins: Simvastatin, atorvastatin.

Closing the Loop: Prevention & Specialist Handover

Patient Counselling Checklist

- [ ] **Complete alcohol abstinence** or strict moderation.
- [ ] **Low-fat diet** with gradual liberalisation; avoid fried/high-fat trigger meals.
- [ ] **Smoking cessation** (independent risk factor for recurrent/chronic disease).
- [ ] **ED Return Triggers:** Return of radiating epigastric pain, vomiting preventing intake >12h, or jaundice.

When to Re-Refer (Specialist Triggers)

- **Recurrent Acute Episodes (≥2):** Needs genetic testing (CFTR, PRSS1) or autoimmune workup (IgG4).
- **Persistent Pain (>4–6 weeks):** Suspect chronic pancreatitis, pseudocyst, or ductal stricture.
- **Refractory Sequelae:** Uncontrolled new-onset diabetes or severe exocrine insufficiency requiring dose-escalated PERT.
- **Imaging Finding:** Any pancreatic mass or cystic lesion identified on follow-up.