Pancreatitis in Children

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What causes pancreatitis in children?

**Genetic Risk Factors (50-75%)**
- Trypsin Pathway: PRSS1, SPINK1, CTRC
- Ductal Pathway: CFTR
- Others: CPA1

**Obstruction (~33%)**
- Pancreas Divisum
- Gallstones
- Other congenital malformation

**Toxins (~20%)**
- Medications
- ↑ Triglycerides

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Image from Aghani.(2015). Pancreapedia
Acute Complications & Symptoms

• **Pain!** – episodic or constant
  – Opioids for pain management
  – Pain may be under-treated
  – Nausea, vomiting

• Hospitalizations
  – 2 ED visits, 1 hospitalization/year
  – Some with dozens of admissions in childhood

• Missed school
  – 2-3 days /month

• Unable to make life plans
  – Vacations, special events, college planning

• Psychological impact
  – Depression, anxiety, social isolation
Long-Term Complications

Exocrine Pancreatic Insufficiency (33%)

Diabetes mellitus (6%)

Lifelong

Image from http://www.pancreapedia.org/reviews/pancreatogenic-type-3c-diabetes
Treatment: Medical

• Symptomatic management of episodes
  – Pain medications (opioid and non-opioid)
  – IV fluids

• Comprehensive pain management program
  – Pharmacologic & non-pharmacologic
  – Health psychologist
  – Physical therapy

• +/- Treatments to ↓ pancreatic stimulation
  – Dietary: Fat restriction avoided for growing kids
  – Enteral feeds (Jejunal)
  – Pancreatic enzymes (non-enteric coated)

• Antioxidants
Treatment: Procedures

ERCP: stone removal, stents for ductal strictures

Pancreas Surgery, including Pancreatectomy with IAT
Total Pancreatectomy with Islet Auto Transplant (TP-IAT)

Image from https://gi.org/topics/ercp-a-patients-guide/

*Grey colored organs are removed
Barriers to Treatment for Children

• Misconceptions that delay diagnosis or result in under-treatment of symptoms:
  – “Children don’t get pancreatitis”
  – “Your lipase is not elevated; it is not the pancreas”
  – “You (your child) must have been drinking”
  – “You don’t look sick [in pain]”
  – “He/she is drug seeking”

• Few treatment options

• Few experts in pediatric pancreatitis → challenge to reach experienced care facility
There is no curative therapy for recurrent pancreatitis:

• Options are to treat symptoms or remove the pancreas

• All treatments are associated with lifelong morbidities
  – Symptomatic treatment = disease persists
  – Surgical resection = residual pain, diabetes, exocrine insufficiency