Managing Pain and Complications in Chronic Pancreatitis

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Chronic Pancreatitis

Basic Questions

- How do we diagnose CP?
- What causes the pain in CP?
- How can we ameliorate the pain in CP?
- What treatment options exist for managing the complications in CP?
Learning Objectives

- Understand the burden of disease
- Review the basic definitions of CP and current nomenclature
- Understand the physiology and neural mechanisms implicated for pain in CP
- Review the medical, endoscopic and surgical treatment options for pain in CP

Diagnostic and Therapeutic Challenge: Team Approach
Quality of Life Evaluation in Chronic Pancreatitis

Wahid Wassef, MD, MPH, FACP
Professor of Medicine
University of Massachusetts Medical School
Director of Endoscopy and Pancreatic Disease Clinic
Program Director of Advanced GI Fellowship
UMassMemorial Medical Center

October 30, 2013

PANCREATITIS QUALITY OF LIFE INSTRUMENT (PANQOLI): validation

<table>
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<tr>
<th>SITE</th>
<th>INSTITUTION*</th>
<th>PI</th>
<th>PATIENTS (n)</th>
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<td>Yadav</td>
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<td>Amann</td>
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Total 175

PANCREATITIS QUALITY OF LIFE INSTRUMENT (PANQOLI)*: unique feature

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<th>PANQOLI</th>
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<td>EMOTIONAL FUNCTION</td>
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<td>HOW OTHERS SEE THEM (STIGMA)</td>
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CP-Definition
Irreversible pancreatic parenchymal damage which 
*may* lead to varying degrees of endocrine and exocrine dysfunction

Symptoms ≠ Imaging ≠ Functional Assessment ≠ Histopathology

Courtesy of Dr Tim Gardner-Dartmouth
Pancreatic Insufficiency

Comparative Analysis of Direct Pancreatic Function Testing Versus Morphological Assessment by Endoscopic Ultrasonography for the Evaluation of Chronic Unexplained Abdominal Pain of Presumed Pancreatic Origin

Riaz Chowdhury, MD, Manoj S. Bhatari, MD, Girish Mishra, MD, Phillip P. Toskes, MD, and Chris E. Forsmark, MD

FIGURE 1. EUS sensitivity versus number of EUS criteria. (Sensitivity is 71% if the cut-off is set at ≥3 EUS criteria.)

FIGURE 2. EUS specificity versus number of EUS criteria. (Specificity is 35% if the cut-off is set at ≥3 EUS criteria.)

FIGURE 3. PPV and NPV percent in comparison with the EUS cut-off chosen (PPV is 71% at a cut-off of ≥3 EUS criteria).
Diagnosing Chronic Pancreatitis

**Basic Definitions**

- **Normal Pancreas**
- **Minimal Change**
- **Chronic Pancreatitis**

**Correlation between EUS and Fibrosis scores**

$r=0.85$

$P<0.001$

Varadarajulu S: GI Endoscopy 2006
The TIGAR-O Classification

**Toxic/metabolic** – alcohol, tobacco

**Idiopathic** – early, late, tropical

**Genetic** – CFTR, SPINK1, PRSS1, CTC

**Autoimmune** – Type I and II

**Recurrent acute**

**Obstructive** – pancreas divisum, SOD dysfunction

Etemad B, Whitcomb D. Gastroenterology 2001

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**CP-Case**

48 y/o male with a history of chronic alcoholism and tobacco use presents with severe intractable epigastric abdominal pain with radiation to the back, 10lb weight loss over the past year and steatorrhea.
What do our patients feel?
Severe, Unremitting Pain

Neurogenic Inflammation in CP

We are trying to prevent this process from leading to chronic parenchymal inflammation and subsequent fibrosis.
Treating Chronic Pancreatitis Pain

- Remove Offending Agent
- Analgesia – opiates, pancreatic enzymes, nerve agents
- Decrease Pancreatic Pressure
  - Ductal Obstruction – Endoscopy/Surgery
- Modify Neural Transmission
  - Celiac plexus block
- Remove Pancreatic Parenchyma

A Randomized Controlled Trial of Antioxidant Supplementation for Pain Relief in Patients With Chronic Pancreatitis

Figure 2: Effect of intervention on primary outcome measure: number of painful days per month.

95% CI 44.98, 161.7. Conclusions: Antioxidant supplementation was effective in relieving pain and reducing levels of oxidative stress in patients with CP.
Treating Chronic Pancreatitis Pain

**Ductal Obstruction** – Endoscopy/Surgery

- Extensive Stone Burden
- Parenchymal Calcifications
- Single Stone

Decrease Pancreatic Pressure

**Ductal Obstruction** – Endoscopy/Surgery
Treating Chronic Pancreatitis Pain

Decrease Pancreatic Pressure

Ductal Obstruction – Endoscopy/Surgery

The Evidence

Endoscopic versus Surgical Drainage of the Pancreatic Duct in Chronic Pancreatitis

Djuna L. Cahen, M.D., Dirk J. Gouma, M.D., Ph.D., Yang Nio, M.D., Erik A.J. Roews, M.D., Ph.D., Marja A. Boerman, M.D., Ph.D., Olivier R. Busch, M.D., Ph.D., Jaap Steyer, M.D., Ph.D., Johan S. Laméris, M.D., Ph.D., Marcel G.W. Dijkstra, Ph.D., Kees Hultbrant, M.D., Ph.D., and Marco J. Bruno, M.D., Ph.D.


<table>
<thead>
<tr>
<th>Variable</th>
<th>Endoscopy [N=19]</th>
<th>Surgery [N=30]</th>
<th>Endoscopic Results [95% CI]</th>
<th>P Value</th>
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<tr>
<td>Technical access [no. (%)]</td>
<td>10 (52)</td>
<td>20 (67)</td>
<td>-47 (-59 to -36)</td>
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<td>Complications [no. (9)]</td>
<td>12 (63)</td>
<td>7 (23)</td>
<td>22 (14 to 31)</td>
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<tr>
<td>Major</td>
<td>9 (47)</td>
<td>6 (20)</td>
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<td>Minor</td>
<td>1 (5)</td>
<td>4 (13)</td>
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<td>Death [no. (%)]</td>
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<td>SF 36 quality of life score</td>
<td>38 (8)</td>
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<td>Mental health component</td>
<td>48 (8)</td>
<td>45 (9)</td>
<td>3 (-9.4 to 12)</td>
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The Evidence of Endoscopic and Surgical Treatment after 2 Years of Follow-up

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Treating Chronic Pancreatitis Pain

Decrease Pancreatic Pressure

Ductal Obstruction – Endoscopy/Surgery

The Evidence

**CONCLUSIONS**

Surgical drainage of the pancreatic duct was more effective than endoscopic treatment in patients with obstruction of the pancreatic duct due to chronic pancreatitis. (Current Controlled Trials number, ISRCTN04572410.)

Recommendations

- Identify simple ductal obstruction vs. more complex disease
- Have a very high threshold for performing ERCP
- Early referral to a pancreaticobiliary surgeon
Treating Chronic Pancreatitis Pain

Nerve Modulation

VS

Celiac Plexus Blockade

Thoracic Splanchnicectomy

Efficacy of CPB

Girish Mishra, MD, MS, FACG

Efficacy of CPB

EUS-guided CPB was effective in alleviating abdominal pain in **59.49%** of patients.


Treating Chronic Pancreatitis Pain

Surgical Procedures: Resection

“Whipple or Distal Procedure”

Focal Disease in the Head/Tail
Case: Chronic Pancreatitis

48 y/o male with a history of chronic alcoholism and tobacco use presents with severe intractable epigastric abdominal pain with radiation to the back, 10lb weight loss over the past year and steatorrhea.
Managing Malabsorption
Pancreatic Enzyme Supplementation
Recommendations

- At LEAST 20,000 Units Lipase/meal to start
- Use most concentrated preparations
- Use acid suppressing agent if non-enteric
- Regular monitoring of nutritional parameters
- If not effective, change formulations

Approved Pancreatic Enzyme Supplements in the United States

Creon
Zenpep
Pancreaze
Ultresa
Viokace
Pertzye

Managing Malabsorption

Vitamin Replacement Recommendations

- AEK – most multivitamins are sufficient
- Calcium/Vitamin D – 1200mg/800IU daily
- Zinc, Magnesium, folic acid – often overlooked

Managing Malabsorption

Recommendations

1. Diagnosis of Chronic Pancreatitis
2. Evaluate Nutritional Parameters
3. Enteric Coated Enzymes (> 20K lipase)
4. Evaluate Nutritional Parameters

- ABNORMAL: Increase enzyme dose and/or add PPI
- NORMAL: Continuous Lifelong Monitoring

Dominguez-Munoz JE. Clin Gastro and Hep 2011;9:541-6
Our Case

What can be done to help this patient?

- Stop alcohol and tobacco
- Start nerve modulating agent
- Initiate pancreatic enzyme supplementation
- ADEK and Zinc replacement
- If no improvement, consider TPIAT referral

Conclusions

- Patients with chronic pancreatitis have markedly decreased QOL
- Diagnosing CP can be challenging
- Complex physiology causing pain
- It is imperative to choose the appropriate intervention based on morphologic damage
- Follow an algorithm to treat malabsorption