CLASSIFICATION OF CHRONIC PANCREATITIS

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Tomica Milosavljević

School of Medicine, University of Belgrade

Clinical Center of Serbia, Belgrade
The phrase “chronic pancreatitis”

- in the clinical context:
  - syndrome of destructive, inflammatory conditions
  - many sequelae of long-standing pancreatic injury
    - (irregular fibrosis, acinar cell loss, islet cell loss, and inflammatory cell infiltrates)
Chronic pancreatitis, morphologically

- Irregular sclerosis
- Destruction, permanent loss of the exocrine parenchyma
- May be either, focal, segmental or diffuse
- Varying degrees of dilatation of the duct system
Problems in definition

- Chronic pancreatitis implies longstanding disease, both in pathogenesis and effect.

- **Defining features**:
  - must consider the etiology
  - characteristic clinical evidence
  - sequelae of organ pathology
  - including complications
Clasiffication 1

- The clinical course is still unpredictable
- The lack of the availability of a clinical classification
Classification 2

- The King’s College Cambridge 1983
  - clinically utilizable system
  - based on ERCP
- The Marseilles 1963, 1984
  - various subtypes and clinical entities
- Rome 1985: pathogenesis and evolution
- Zurich 1996
  - alcohol related
  - not provided prognostic information
Clasification 3

- TIGAR-O (2001.)
- ABC criteria (Ramesh 2002)
- Manchester 2006 (ABC)
- M-ANNHEIM 2007 (Schneider)
Etiologic risk factors – TIGAR-O system

- Toxic-metabolic
  - Alcohol
  - Tobacco
  - Hypercalcemia
  - Hyperlipidemia
  - Chronic renal failure
  - Medications (Phenacetin abuse)
  - Toxins (organotoxin compounds)

- Idiopathic
  - Early onset
  - Late onset
  - Tropical
    - Tropical calc. pancreas
    - Fibrocalculous diab.
    - Other
Etiologic risk factors – TIGAR-O system

Genetic

- Autosomal dominant
  - Cationic trypsinogen (Codon 29, 122 mut.)

- Autosomal recessive/modifier genes
  - CFTR mutations
  - SPINK1 mutations
  - Cationic trypsinogen (codon 16, 22, 23 mut.)
  - Alfa 1 antitrypsin deficiency (possible)

Autoimmune

- Isolated autoimmune

- Syndromic autoimmune
  - Sjogren
  - IBD associated
  - Prim. bill. cirrhosis assoc.
### Etiologic risk factors – TIGAR-O system

<table>
<thead>
<tr>
<th>Recurrent and severe acute</th>
<th>Obstructive</th>
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</thead>
<tbody>
<tr>
<td>‒ Postnecrotic acute</td>
<td>‒ Pancreas divisum</td>
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<tr>
<td>‒ Recurrent acute</td>
<td>‒ Sphincter Oddi disorders (controversial)</td>
</tr>
<tr>
<td>‒ Vascular dis./ishemic</td>
<td>‒ Duct obstruction (tumor)</td>
</tr>
<tr>
<td>‒ Postirradiation</td>
<td>‒ Preampullar duodenal wall cyst</td>
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<tr>
<td></td>
<td>‒ Posttraumatic pancreatic duct scars</td>
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Why new clinical classification?

- Clinical experience
- Progress in diagnostic methods
- New molecular technologies for the assessment
- Key clinical aspects is crucial

Ideal Classification for chronic pancreatitis:

- User friendly,
- transparent,
- relevant,
- prognosis-as well as treatment-related
- and offers a frame for future disease evaluation.

M W Büchler, M E Martignoni, H Friess, P Malfertheiner  
Facts and state-of-the-art knowledge in chronic pancreatitis (I)

- 1) Different etiologies
- 2) There are no serologic or blood markers
- 3) Pathognomonic lesions are detectable by imaging
- 4) Loss of exocrine and endocrine function develops
Facts and state-of-the-art knowledge in chronic pancreatitis (II)

5) The end stage steatorrhea and insulin-dependent diabetes mellitus.

6) Complications are known such as common bile duct, duodenal, main pancreatic duct and vascular obstruction/stenosis.

7) Risk factor for pancreatic cancer.

8) Overall life expectancy is reduced.
Unresolved issues in chronic pancreatitis (I)

1) The relationship between acute and chronic pancreatitis is not completely defined.

2) Disease progression, arrest and regression of functional and morphologic findings occur is debated.

3) Diagnosis of early chronic pancreatitis by imaging is not established.

4) The role and validity of exocrine pancreatic function tests in the diagnosis is not established.
Unresolved issues in chronic pancreatitis (II)

- 5) The pathogenesis of pain is at least multifactorial and not defined.
- 6) The burn-out hypothesis is still debated and not defined with regard to time evolution in different etiologies.
- 7) There is disagreement over whether to use enzyme treatment to influence pain.
- 8) The role of endoscopic intervention is not defined under evidence-based criteria.
- 9) The role of surgery is not defined under evidence-based criteria.
Clinical Criteria

- pain
- attacks of acute pancreatitis
- complications of CP
- steatorrhea
- diabetes mellitus
Definition of complications (1)

■ bile duct obstruction/stenosis with cholestasis or jaundice/

■ duodenal obstruction/stenosis with clinical signs/

■ vascular obstruction/stenosis with clinical or morphological signs of portal/splenic vein hypertension
Definition of complications (2)

- pancreatic pseudocysts with clinical signs (compression of adjacent organs, infection, bleeding, etc.)
- pancreatic fistula (internal or external)
- pancreatogenic ascites
- other rare complications related to organs in vicinity (i.e., colonic stenosis, splenic pseudocyst, etc.)
Imaging criteria for chronic pancreatitis

- **Ductal changes:** Irregularity of the main pancreatic duct or side branches ± intraductal filling defects, calculi, duct obstruction (stricture), duct dilatation (>3 mm)

- **Parenchymal changes:** General or focal enlargement of the gland, cysts, calcifications, heterogenous reflectivity.
Etiology of chronic pancreatitis

- alcohol
- idiopathic (unknown origin)
- hereditary autoimmune or in combination with specific diseases (Crohn's, PBC)
- tropical
- cystic fibrosis
- obstructive (pancreatic duct)
- drugs
Specific definition of chronic pancreatitis stage A (1)

- **Stage A:**
  - the early stage, complications have not yet appeared, the clinical exocrine and endocrine function is preserved;
  - subclinical signs (impaired glucose tolerance, reduced exocrine function but without steatorrhea) might already be apparent.
Stage A is accepted under the following conditions:

- Pain of any type and degree and/or attacks of acute pancreatitis,
- no complications,
- no steatorrhea,
- no insulin-dependent diabetes mellitus.
Specific definition of chronic pancreatitis stage B (1)

- **Stage B:**
  
  - the intermediate stage where chronic pancreatitis has led to complications,
  
  - but clinical exocrine and endocrine function is still preserved.
Specific definition of chronic pancreatitis stage B (2)

- The type of complication is specified (e.g., stage B, bile duct)

- Stage B is accepted under the following conditions:
  - Patients with complications,
  - but without steatorrhea or diabetes mellitus
Specific definition of chronic pancreatitis stage C (1)

- Stage C
  - is the end stage of chronic pancreatitis, fibrosis has led to clinical exocrine and/or endocrine pancreatic function loss (steatorrhea and/or diabetes mellitus); complications of chronic pancreatitis might or might not be present

- the type of exocrine and/or endocrine pancreatic function loss is specified (e.g., stage C, steatorrhea)
Specific definition of chronic pancreatitis stage C (2)

- **Stage C** can be sub classified into three categories:
  - C1: Patients *with endocrine* function impairment
  - C2: Patients *with exocrine* function impairment
  - C3: Patients *with exocrine/endocrine* function impairment and/or complications

- **Stage C** is accepted under the following conditions:
  - Patients with clinical manifestation of end-stage functional impairment with or without complications.
Controversies in chronic pancreatitis classification

- Endoscopical interventions, yes/no?
- Surgical dilemma - resection/drainage?
- Follow-up the patients and reconsider classification
Thank you very much for your attention

Prof. Dr Tomica Milosavljević MD PhD
School of Medicine, University of Belgrade
Clinical Center of Serbia, Belgrade