

# Acute Pancreatitis

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Hirlan

# Acute pancreatitis

- Remains a serious disease
- Often goes to a complicated disease and life threatening course
- Around 30% of patients will develop SAP
- Overall mortality : 10 – 15%  
SAP mortality : 30 – 58%

# Revised definition of morphological features

- Acute interstitial oedematous pancreatitis
- Necrotizing pancreatitis
  - sterile or infected necrosis
- Acute Peripancreatic fluid collection (APFC)
  - sterile or infected
- Acute necrotic collection (ANC)
- Pancreatic pseudocyst
- Walled-off necrosis (WON)

(classification of acute pancreatitis 2012)

# Diagnosis

Diagnosis of AP requires two or more of the following

- Clinical symptom and sign characteristic of AP
- Elevated serum amylase / lipase  
3 times the ULN or more
- Characteristic finding on imaging study.

Banks PA, et al. Am J Gastroenterol 2006;101:2379-2400

# Laboratory Parameters

- amylase remain normal in 1/5 of AP  
alcoholic induced AP, hypertriglyceridemia
- Amylase and lipase might be high in the absence of AP
  - macroamylasaemia / macrolipasemia
  - decreased glomerular filtration rate
  - Inflammation of abdominal ekstra pancreatic disease
  - disease of salivary gland
  - gynecological disease

(Tenner S et al. American college of gastroenterology guideline. Juli 2013 )

## Imaging study

- majority of AP CECT is not required
- routine early CECT is not recommended
  - (i) no evidence that early CECT improves outcome
  - (ii) CT scoring system are not superior to clinical scoring system in predicting severity
  - (iii) inappropriate CT may increase the duration of hospital stay

( working group IAP/APA acute Pancreatitis guidelines, Pancreatology 2013)

## Initial assessment

- Etiology
- Risk stratification
  - grade of severity
  - definition of severe AP
  - prediction of outcome

# Etiology

- Biliary pancreatitis
  - biliary stone
  - biliary tumor
- Non biliary pancreatitis
  - infection
  - metabolic
  - drugs, toxins, alcohol
  - idiopathic
  - genetic



## Idiopathic AP

- 32-88% , diagnosed by EUS detecting :  
sign of chronic pancreatitis and biliary sludge
- 10-15%, Anatomic and functional anomalies of  
pancreas
- If etiology remain unidentified genetic counseling  
is needed.

## Grades of severity

- mild acute pancreatitis
  - no organ failure
  - no local or systemic complication
- moderately severe acute pancreatitis
  - transient organ failure and or
  - local or systemic complication
- severe acute pancreatitis
  - persistent organ failure  
single or multiple

## Prediction of severe AP on admission

- SIRS is advised, to predict SAP
- SIRS : is defined as : 2 or more of the following
  - temperature  $< 36$  or  $> 38$  degree of Celcius
  - Heart rate  $> 90/\text{min}$
  - respiratory rate  $> 20/\text{min}$
  - WBC : leucopenia or leucositosis
- Persistent SIRS (more than 48 hs)  
associated with MOF and mortality

## Best strategy to predict outcome

- host risk factors
  - age,, co-morbidity, BMI
- clinical risk stratification
  - persistent SIRS
- monitoring response to initial therapy
  - persistent SIRS, BUN, creatinine

## Multiple organs failure (Atlanta criteria)

- Shock : systolic pressure < 90 mmHg
- Pulmonary insufficiency : PaO<sub>2</sub> < 60 mmHg
- Renal failure : creatinine > 2.0 mg/L
- GI bleeding > 500 cc/24 h

**Marshal's criteria** : more complicated

To determinate severity, early imaging is limited by several factors :

- Only a quarter of patients develop necrosis
- Necrosis may not develop until after 24-48 hrs
- The presence of necrosis and the amount of necrosis does not correlate with the development of organ failue

## CT necrosis score

### Balthazar- Ranson scoring

- grade A – normal CT
- grade B : focal/diffuse enlargement of pancreas
- grade C : pancreatic gland abnormalities and peripancreatic inflammation
- grade D : fluid collection in a single location
- grade E : fluid collection in  $\geq 2$  location and or gas bubbles in or adjacent to pancreas

Grade point :

A = 0, B = 1, C = 2, D = 3, E = 4

## Necrosis percented points

- no necrosis = 0
- necrosis of the pancreas < 30% = 2
- necrosis of the pancreas 30 – 50% = 4
- necrosis of the pancreas > 50% = 6

CT severity index : CT grade points + CT necrosis points



# Local complication

- Necrosis
  - sterile
  - infected
- Pancreatic abscess
- Pseudocyst
  - sterile
  - infected

## Treatment

### Goal of treatment of acute pancreatitis

- Supportive care
- reduction of inflammation
- assessment and management of complications
- surgical management

## Supportive care

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- Prevent hypoxemia
- Insure adequacy of fluid resuscitation

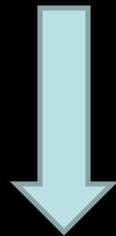


- vital sign monitoring  
oxygen saturation  $\leq$  95%, performed BGA
- Analgesic with narcotic agent
- Aggressive IV fluid replacement.

## Initial management

- No medication has been shown to be effective
- an effective intervention :

early aggressive IV hydration



250-500 ml/h RL  
during first 12 – 24 h

HR < 120/mnt  
Urinary output > 0,5-1 ml/kg/h  
Hematocrit 35-44%  
Decrease BUN

# Nutrition

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- Historically it was believed that pancreatic rest was very important.
- Meta-analysis : Total enteral nutrition, at least, is equal to TPN.
- What type of TEN have to used ?  
Nasojejunal, Nasogastric or oral ?

## The role of Antibiotic

- Extra pancreatic infection
- Infected necrosis :  
use antibiotic known has good penetration to necrosis.
- Infected necrosis : ( deteriorate after 7-10 day)
  - (i) initial CT guided
  - (ii) empiric used of antibiotic
- No indication to use antibiotica for prevention

# The role of ERCP

ERCP should only be used in :

- Severe pancreatitis, with other radiographic studies it is suspected stone on bile duct
- Biliary pancreatitis with obstructive jaundice and clinical deterioration despite maximal supportive therapy in 72 – 96 hrs after the onset of the disease.

## Indication for ERCP

- Biliary AP with common bile duct obstruction
- Biliary AP with concurrent acute cholangitis  
(ERCP should undergo within 24 h )
- ERCP is not needed
  - predicted mild biliary AP with out cholangitis
  - prevented Severe biliary AP without cholangitis

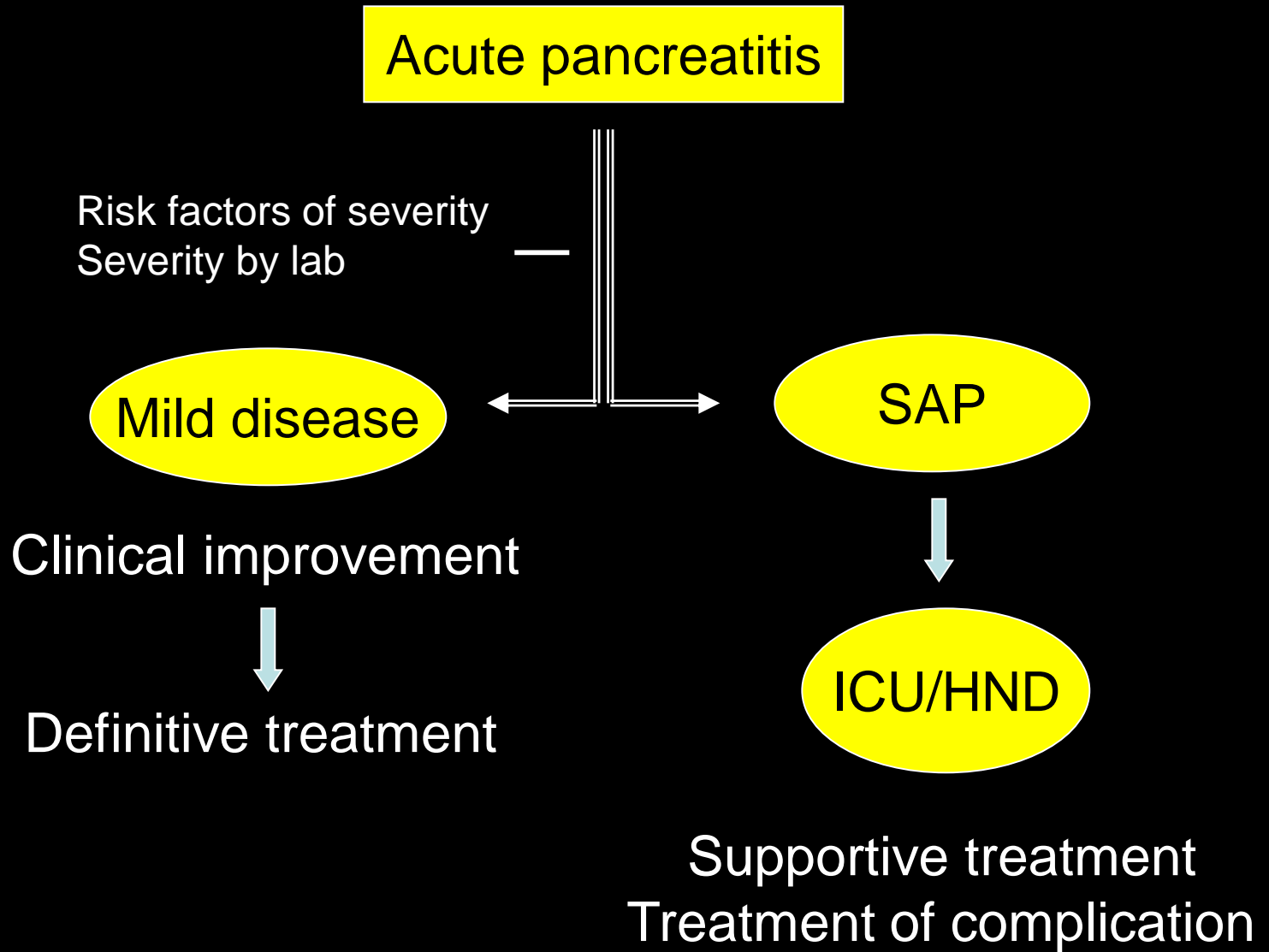
( working group IAP/APA acute pancreatitis Guidelines. Pacreatology 2013)



## Indication for intervention

- Infected necrotizing pancreatitis with clinical deterioration preferably when become WON
  - In the absence of documented infected necrotizing AP  
On going OF (several weeks), preferably become WON
- ➡ When possible invasive procedure should be delayed until at least 4 weeks after the onset of AP

# Resume



**Thank You**