National Medical Academy of Post-Diploma Education named after P.L. Shupik

Acute Pancreatitis: the evidence-based priority of treatment

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Acute pancreatitis (AP): mortality

- Edematous (mild) pancreatitis up to 1%
- Necrotizing pancreatitis 10% - 24%
- Pancreatic sepsis 70% - 80%

Mayerle J., Simon P., Lerch M.M. Gastroenterol Clin N Am 2004; 33: 855-869

High risk patients identification

- Severe AP: early development of MOD
- High risk of aggravation:
  - advanced age
  - obesity
  - insufficient fluid resuscitation
  - necrosis >30%

Recommendation for ICU hospitalisation
(level of evidence 5, recommendation level D)

Nathens A.B., Curtis J.R., Beale R.J. et al. Crit Care Med 2004; 32:2524-2536

Fluid resuscitation – the most important therapeutic priority

- Patients with AP often have mega-deficit of VCB
- Hypovolemia provokes:

  - ischemia and necrosis of pancreas

  - ischemia of intestine, bacteria translocation and infection (local and systemic)
- There is 12 – hours “therapeutic window” for prevention of deterioration

JPN Guidelines for the management of acute pancreatitis: medical management of acute pancreatitis

An adequate volume of intravenous fluid should be promptly administered to correct the volume deficit and maintain basal fluid requirements

(recommendation A)

Takeda K., Takada T., Kawarada Y., Hirata K., Mayomi T. et al.
J Hepatobiliary Pancreat Surg 2006; 13:42-47

Acute pancreatitis: fluid resuscitation

- Initial dose 60 – 120 ml/kg bode weight colloids and crystalloids
- 1/2 – 1/3 of day dose during the first 6 hours
- No convincing evidence about advantage of colloids or crystalloids
- Expert recommendations: colloid/crystalloid ratio 1:3

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Adequacy of fluid resuscitation

- Diuresis (>1 ml/kg/h)
- Dynamic Ht (30% - 35%)
- CVP (8 – 12 cm H_2O)
- Monitoring of respiratory function (hypoxemia?) and ABS (acid-base state)

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Risks of fluid resuscitation

- Insufficient fluid infusion:
  - vasospasm of intestine zone
  - impaired microcirculation of Pancreas
  - necrosis extension
- Large positive balance:
  - peripheral oedema
  - increasing of lung fluid, oedema
  - necessity of Artificial Ventilation

Mayerle J., Simon P., Lerch M.M. Gastroenterol Clin N Am 2004; 33: 855-869

Persistent abdominal pain

- Typical symptom of SAP (severe acute pancreatitis)
- Is an important chain of pathogenesis of SAP
- Often very intensive

Analgesia for pancreatic pain

- Caution for opiates due to potential spasm of sphincter Oddi. No control trials.
- Administration of Buprenorphin or Pethidin, that do not have adverse effects
- Tramadol, as alternative for opiates, is not recommended due to nausea and vomiting*
- Combination of NSAID with small doses of opiates
- Epidural analgesia

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Alternative method for treatment of pancreatic pain

- As base therapy M.Runzi et al. (2000) recommended procaine hydrochloride (i/v 2 g/day)
- Procaine for analgesia of pancreatic pain is not effective (C. Zwernemann et al., 2000)
- Procain could be combined with opioids
- Unknown mechanism of action. Possible explanation is phospholipase A2 inhibition

Antibiotics for treatment of AP

- Infected pancreonecrosis - increased mortality (70% - 80%)
- Traditionally, antibiotics are administered
- Few trials for antibiotic prophylaxis in pancreatic sepsis

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Necrotising pancreatitis: infection and antibiotics

- 25% - 75% - infection of pancreonecrosis*
- Most often infection develops after 3 – 4 weeks from the onset of symptoms*
- Sufficient penetration into Pancreas was found for: clindamycin, imipenem, meropenem, metronidasol, fluoroquinolones, cephalosporins*
- Early antibiotic administration in case of necrotising pancreatitis can decrease rate of complications and even mortality**

*Golub R, Siddiqi F, Pohl D j Gastrointest Surg 1998; 2 (6): 496 - 503

**Bassi C, Lavrin M, Villatoro E, Cochrane Database Syst Rev 2003; (4): CD 0029441

Necrotising pancreatitis and fungi infection

- Fungi colonisation was found in 20% of resection material from necrosis zone
- Simultaneously fungi was found in blood
- Many patients had fungi sepsis, treated inadequately

Farkas G, Marton J, Maudi Y, Szederkenyi E, Balogh A Scand j Gastroenterol Suppl 1998; 228: 31 - 37

Antimycotic prophylactic and therapy of Acute Pancreatitis

- No randomised trials
- It is not determined what antifungal drugs penetrate into pancreas
- Retrospective trial demonstrated decreasing of fungal infection with prophylactic administration of fluconazole, without decreasing of mortality*

*De Waele JJ, Vogelaers D, Blot S, Colardyn F Clin Infect Dis 2003; 37: 208 - 213

Severe Acute Pancreatitis: optimising nutritional support

- Enteral nutrition is superior to total parenteral nutrition
- Initiation of enteral nutrition after initial resuscitation
- Preferable is intra-jejunal route (if possible)

Evidence 1a; recommendation A

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Severe Acute Pancreatitis: optimising nutritional support

- Parenteral nutrition is recommended on 5 – 7 day after failing to start enteral nutrition

  (evidence 5, recommendation D)
- Glutamin enriched parenteral nutrition

  (evidence 5, recommendation D)
- During nutritional support the protocol of glycaemia control should be followed

  (evidence 1b, recommendation A)

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SAP: pathogenetic therapy

- Inhibitors of pancreatic enzymes are not recommended for treatment of acute pancreatitis (2 multicentral trials) *
- Inhibitors of pancreatic secretion – no therapeutic effect*
- Immune-modulation of inflammatory response: anti–TNFa and Lexipafant – no positive effect. Are not recommended (evidence 1b, recommendation A)**

*Mayerle J., Simon P., Lerch M.M. Gastroenterol Clin N Am 2004; 33: 855-869

**Nathens A.B., Curtis J.R., Beale R.J. et al. Crit Care Med 2004; 32:2524-2536

Thanks for your attention !