Choc septique d'origine inattendue…

Séminaire de Pathologie Infectieuse
Jeudi 30 septembre 2004 à 12h30
Cliniques Universitaires Saint-Luc, Bruxelles

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Service des Soins Intensifs
Cliniques universitaires Saint-Luc, Bruxelles
S.M., 57 year male

- **June 13, 02:20**
  - ED for altered general condition (« not well »)
  - Fully oriented.
  - Abdominal discomfort and previous chills
  - **PMH :** Psoriasis ? (MP 4 mg/d)
  - Physical examination : normal but
  - HR 145, RR 28, Temp 37.4
  - and BP 72/50 mmHg
– **Lab**:
  - CRP 32 mg/dl, WBC 5,800/mm³, platelets 52,000/mm³, Creatinine 2 mg/dl, PT 17.1 sec and D-dimer 9278 mcg/ml

– **ABG**:
  - pH 7.50, PACO₂ 20 mmHg, PAO₂ 69 mmHg, BD 5.6 mmol/L Lactate 6 mmol/L

– **Chest X-ray**:
  - Unconclusive? Infiltrate?
Additional lab data

- Creatinine : 2 mg/dl
- P : 0.6 mg/dl, Bilirubin 1.7 mg/dl
- SGPT : 384 UI/L, LDH : 1138 UI/L
57 y (con’d)

- **02:20** BP 72/50
  - Colloids and fluids
- **03:15** Suspected Pneumonia
  - Amoxi-Clav 2 gr
- **02:20 to 06:00**
  - 2500 ml Colloids and cristal.
  - 06:30 ; NA started (25 mcg/min)
- **08:00** ICU admission
  - NA 26.8 mcg’
Concensual DIC score

(SSC/ISTH)

- platelet count 0-2
- fibrin-related marker 0-3
- prolonged PT 0-2
- fibrinogen 0-1

≥ 5: “DIC”

Thromb Haemostas
2001
## Modified ISTH Scoring System for DIC

<table>
<thead>
<tr>
<th>Global coagulation tests</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platelets counts (10^9/L)</td>
<td></td>
</tr>
<tr>
<td>&lt; 50</td>
<td>2</td>
</tr>
<tr>
<td>&lt; 100</td>
<td>1</td>
</tr>
<tr>
<td>≥ 100</td>
<td>0</td>
</tr>
<tr>
<td>D-dimer levels (µg/ml)</td>
<td></td>
</tr>
<tr>
<td>&gt; 4</td>
<td>3</td>
</tr>
<tr>
<td>&gt; 0.39</td>
<td>2</td>
</tr>
<tr>
<td>≤ 0.39 (upper limit of normal)</td>
<td>0</td>
</tr>
<tr>
<td>Prothrombin time (seconds)</td>
<td></td>
</tr>
<tr>
<td>&gt; 20.5</td>
<td>2</td>
</tr>
<tr>
<td>&gt; 17.5</td>
<td>1</td>
</tr>
<tr>
<td>≤ 17.5 (14.5 as upper limit of normal)</td>
<td>0</td>
</tr>
</tbody>
</table>

*Overt DIC status requires total score* ≥ 5

*platelet counts < 30,000 10^9/L were excluded from PROWESS*  
No fibrinogen was collected in PROWESS  
*D-dimer was substituted for fibrin degradation products (FDP)*
Over DIC and 28-day mortality

mortality overt DIC: 43%
mortality no DIC: 27%
DIC score and mortality

- DIC score is a significant and independent predictor of mortality

  - for each DIC point: odds ratio for mortality 1.29
  - for each APACHE point: odds ratio for mortality 1.07
  - for each year of age: odds ratio for mortality 1.03
Severe Sepsis-associated mortality and number of Organ Dysfunction

SOFA: Vincent, CCM 1998. (*) Four and Five for SOFA
APACHE II and 28-day mortality
Placebo-treated patients in Sepsis studies

Mortality

APACHE II (%)

Prowess
EZZF

<19 20-24 25-29 >30
S.M. 57 y (con’d)

- Liver abscess: cannot be drained
- Antimicrobials had been given 50 min after admission
- Fluids: > 3,000 ml
- Steroids: hydrocortisone within 4 hours
- Hypotension sustained (NA)
- Lactate: from 6 mmol/L to 7.8 mmol/L
- Creatinine: 2 mg/dl to 2.9 mg/dl (17:00)
- DIC: Platelets down to 42,000/mm3, PT: 19 sec, D-dimer 9,278 mcg/ml
- Xigris?
Steroids low doses?

- Bollaert et al. *CCM 1998;26:645-50*
- Briegel et al. *CCM 1999;27:723-32*
  - $N = 299$ Refractory septic shock (randomized, placebo-controlled, double-blind, multicenter)
  - ACTH short test
  - Treated with 50mg/6h Hydrocortisone 7 days
  - Results:
    - All patients : (RR 95% CI) 0.712 (p = 0.029)
    - Responders (n=70) 0.696 (p = 0.303)
    - Non respon. (n=229) 0.670 (p = 0.023)
- Corticus : randomized, controlled, double-blind (n = 800) ?
PROWESS: Mortality by ISTH Overt DIC Status

<table>
<thead>
<tr>
<th></th>
<th>Drotrecogin Alfa N (activated)</th>
<th>Placebo</th>
</tr>
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<tbody>
<tr>
<td>Overall</td>
<td>1690 24.7%</td>
<td>30.8%</td>
</tr>
<tr>
<td>Overt DIC</td>
<td>454 30.5%</td>
<td>43.0%</td>
</tr>
<tr>
<td>No Overt DIC</td>
<td>1114 22.1%</td>
<td>27.1%</td>
</tr>
</tbody>
</table>

Relative Risk of Death (Point Estimate and 95% CI)
Day 2:
- Noradrenaline reduced
- Diuresis restored
- Blood lactate reduced
- Persisting overt DIC
- Recurrent chills…

Gastroscopy

Blood culture: Streptococcus « G », Strep. sanguis
Liver Abscess
Stomach
Foreign body?
Day 2 (post gastroscopy) (PAO2/FiO2: 220 mmHg-ALI)

Blood cultures (admission): Streptococcus « G »
Abdominal CT Scan Day 3

- Left Liver Abscess
- Foreign body
- Pancreas
- Stomach
Fishbone (3.1 cm)
Coagulation parameters over time

- **June 13:**
  - Plate: 50
  - PT (sec): 10

- **June 15:**
  - Plate: 40
  - PT (sec): 20

- **June 16:**
  - Plate: 30
  - PT (sec): 30

- **June 18:**
  - Plate: 20
  - PT (sec): 40

- **June 13 (OR):**
  - Plate: 60
  - PT (sec): 50

- **June 15 (OR):**
  - Plate: 50
  - PT (sec): 60

- **June 16 (OR):**
  - Plate: 40
  - PT (sec): 70

- **June 18 (OR):**
  - Plate: 30
  - PT (sec): 80

- **June 13 (Xigris):**
  - Plate: 70
  - PT (sec): 90

- **June 15 (Xigris):**
  - Plate: 60
  - PT (sec): 100

- **June 16 (Xigris):**
  - Plate: 50
  - PT (sec): 110

- **June 18 (Xigris):**
  - Plate: 40
  - PT (sec): 120

**Platelets (4U):**

**Gastroscopy:**
Day 3 (post laparotomy) (PAO2/FiO2: 147 mmHg-ARDS)
Liver Abscess: associated conditions

• Biliary tract:
  – Ascending cholangitis?
  – Biliary tract stenosis, prosthetic material

• «Vascular»:
  – Hepatic artery thrombosis
  – Portal vein? «phlebitis»
  – «Ischemia»?

• Postsurgical?
  – Hepatectomy
  – Chemo-embolization
Blood: E coli (3), Clostridium perfringens, E faecalis
Percutaneous drainage of Liver
Blood: Streptococcus milleri    Bile: Proteus mirabilis, Candida
Blood: Lactobacillus spp
Abscess: E. faecalis, Lactobacillus, Clostridium ramosum, Candida pseudo-tropicalis
Blood : E. faecalis (> 7 days)
Infected pancreatitis: post-surgery and liver necrosis

Blood: E faecium
Liver abscess microbiology
(community-acquired and nosocomial)

• **Community-acquired**:  
  – Enterobacteriaceae  
  – Streptococci, anaerobes  
  – St aureus, *Entamoeba histolytica*

• **« Nosocomial »**:  
  – Enterobacteriaceae  
  – Streptococci, anaerobes  
  – St aureus  
  – Pseudomonas aeruginosa  
  – Candida spp