LEPTOSPIROSIS WITH SEPTIC SHOCK

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Leptospirosis is the **most common zoonosis** in the world

- Worldwide distribution
- Caused by spirochetes
- Clinical history - the key to diagnosis
- Broad spectrum of clinical findings
- Clinical syndromes: anicteric (90%) and icteric
- Can develop circulatory collapse and shock
Case presentation

1. Identification, Personal and Family History
2. Clinical History and Presentation
3. Investigation
4. Diagnosis and Treatment
5. Evolution

CASE PRESENTATION

- DM 14-year-old boy
- Caucasian
- Urban setting
- Irrelevant personal and family history
- No allergies and current medication
- Contact with **dogs**, **cats** and **rats**
CASE PRESENTATION

FEVER + ASTHENIA + PALLOR

- Fever (40 ºC)
- Asthenia
- Vomiting
- Pallor

D1
- Headache
- Neck pain

D3

D5
- Tachypnea
- Hypoxemia
- Tachycardia (140 bpm)
- Hypotension (60/30 mmHg)
- Oliguria (0.7 mL/Kg/h)

D7
- Fever
- Pallor
- Palpitations
- Chest pain

- Pallor
- Poor peripheral perfusion
- Anicteric
- No rash or tache noir
- Hepatomegaly and splenomegaly
### Labs

<table>
<thead>
<tr>
<th></th>
<th>D5</th>
<th>D7</th>
<th>D8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haemoglobin (g/dL)</td>
<td>12,3</td>
<td>11,9</td>
<td>10,2</td>
</tr>
<tr>
<td>WBCs (/uL)</td>
<td>7800</td>
<td>13000</td>
<td>11300</td>
</tr>
<tr>
<td>Neutrophils (%)</td>
<td>79,02</td>
<td>87,52</td>
<td>90,32</td>
</tr>
<tr>
<td>Platelets (/uL)</td>
<td>180000</td>
<td>143000</td>
<td>226000</td>
</tr>
<tr>
<td>PT (seconds)</td>
<td>13,6</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>APTT (seconds)</td>
<td>36,2</td>
<td>31,9</td>
<td>30,9</td>
</tr>
<tr>
<td>Fibrinogen (g/L)</td>
<td>6</td>
<td>7,6</td>
<td>6,1</td>
</tr>
<tr>
<td>D-Dimer (ug/L)</td>
<td>-</td>
<td>1137</td>
<td>1639</td>
</tr>
<tr>
<td>CRP (mg/dL)</td>
<td>119,4</td>
<td>259,6</td>
<td>252,7</td>
</tr>
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<td>GOT (U/L)</td>
<td>80</td>
<td>28</td>
<td>13</td>
</tr>
<tr>
<td>GPT (U/L)</td>
<td>150</td>
<td>76</td>
<td>46</td>
</tr>
<tr>
<td>Albumin (g/L)</td>
<td>-</td>
<td>-</td>
<td>23,9</td>
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CASE PRESENTATION

- CXR

Enlargement of the cardiac silhouette

D7 [08Aug2015]

D8 [09Aug2015]
CASE PRESENTATION

- Ultrasound

**Echocardiogram**

- Pericardial effusion

- **Ultrasound**

  - **Echocardiogram**

  - **Hepatomegaly**

  - **Splenomegaly**

  - **Pleural effusion**
CASE PRESENTATION

- Ultrasound

Doppler study of the portal vein and inferior vena cava without changes.
CASE PRESENTATION

- Fever of unknown origin
- Pallor + Asthenia
- Hepatomegaly + Splenomegaly
- Tachycardia + Hypotension + Oliguria
- Tachypnea + Hypoxemia
- ↑ WBCs + ↑ Neutrophils + ↓ Platelets
- ↑ CRP
- ↑ Liver enzymes
- ↓ Albumin
- Polyserositis
- Contact with dogs, cats and rats

Blood culture, Rickettsias, Bartonella, Enterovirus, Leptospira - urine direct test and RT-PCR

ICU

D8

Inotropic support
Supplementary oxygen
Ceftriaxone
Doxycycline
Ciprofloxacin

Circulatory collapse

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Conclusion

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CASE PRESENTATION

- No supplementary oxygen & normal urine output
- Apyrexia

- Episcleritis

Ultrasound

D18 [19Aug2015]

Dexamethasone
Neomycin

Ursodeoxycholic acid

Ultrasound

D21 [22Aug2015]
### Case Presentation

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<th>D9</th>
<th>D16</th>
<th>D20</th>
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<tr>
<td>Haemoglobin (g/dL)</td>
<td>12,3 ↓</td>
<td>11,9 ↓</td>
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<td>12,2 ↓</td>
<td>12,7 ↓</td>
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<td>12300</td>
<td>10500</td>
<td>8200</td>
</tr>
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<td>Neutrophils (%)</td>
<td>79,02 ↑</td>
<td>87,52 ↑</td>
<td>90,32 ↑</td>
<td>86,82 ↑</td>
<td>48,86 ↑</td>
<td>27,78</td>
</tr>
<tr>
<td>Platelets (/uL)</td>
<td>180000</td>
<td>143000 ↓</td>
<td>226000</td>
<td>252000</td>
<td>648000 ↑</td>
<td>262000</td>
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<td>1127 ↑</td>
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Blood culture, rickettsias, bartonella and enterovirus negatives

- Leptospirosis

urine direct test and RT PCR Positive

- No supplementary oxygen & normal urine output
- Apyrexia
- Episcleritis

Ends the inotropic support

LEPTOSPIROSIS

14 days of ceftriaxone

- Progressive improvement on clinical condition

NOTIFICATION OF INFECTION DISEASE
public health delegate was called to intervene

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CONCLUSION

- Leptospirosis can be an underdiagnosed infection in our country
- It is a frequent acute systemic infection
- Has diverse and nonspecific manifestations
- Potentially life threatening
- The physician has to have a high clinical suspicion to do the diagnosis


Thank you 😊