Alimentary infections (food born infections)

Case report

Case report 1

- The girl, age 3 years has 4 weeks diarrhea with short periods with normal stool, stool is a greenish color, without blood, at home with normal body temperature, without vomiting, with flatulence, slightly lost weight. She does not go to nursery school, she is at home with mother.
- Anamnesis – the father was 2 months ago in India (2 weeks), he is without any health problems, without antimalarial drugs.
- The child in ambulance: body temperature 36,8°C , belly sensitive to palpation.

Laboratory examination:

The blood: normal results

Rectal swab – results of bacteriological cultivation:

Escherichia coli, Enterococcus sp., Klebsiella sp.

Stool sample - virology: rotaviruses neg., adenoviruses neg.,noroviruses neg.

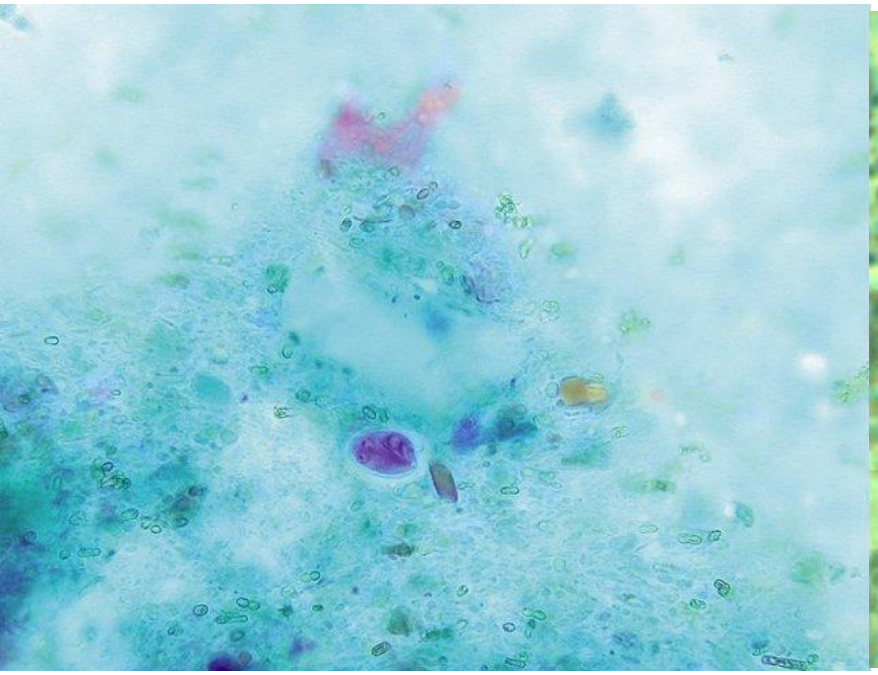
Case report 1

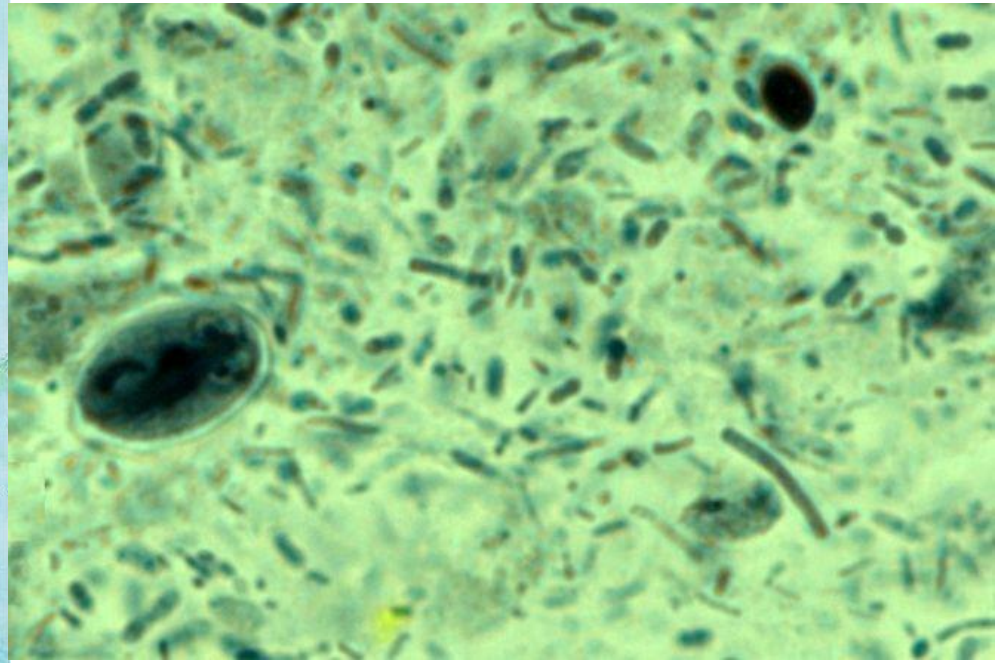
Questions:

1. Which other examinations do you suggest?
2. How would you take the biol. material for cultivation?,

   - for detection of viral antigens (on page above) and for parasitological examination?
3. Which microorganisms can be the cause of chronic diarrheal disease when stool is without blood ?

Case report 1





4. Which microorganism is on the picture?
5. Which life form of this microorganism we can see on the picture?
6. Which staining methods in parasitology you know?
7. Therapy ?
8. What is probably the source of infection for child - patient?
9. Prevention?


What is this ???

Case report 2

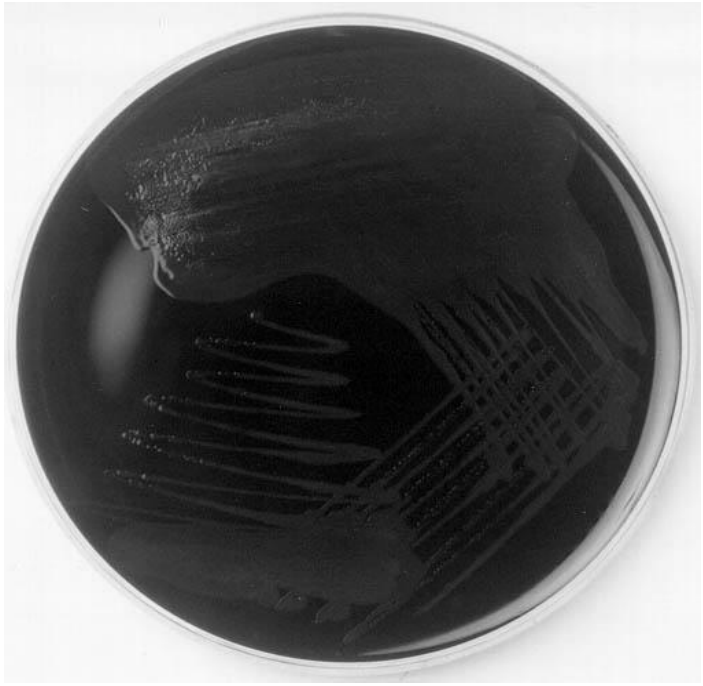
- The young man (20 years, student) – is comming in the afternoon to the medical emergency with 2 days diarrhea with the blood in the stool, body temperature in the evening was 38,4 °C, he has abdominal pain – now worse, colic
- Anamnesis: 6 days ago he was at a home party with a barbecue (chicken, turkey, beef); two months ago he traveled around Turkey
- In medical ambulance: body temperature 37,6 °C, abdominal pain on palpation, dry lips
- **Laboratory examination of the blood sample:** CRP (C reactive protein) 20, mild leukocytosis, other examinations normal

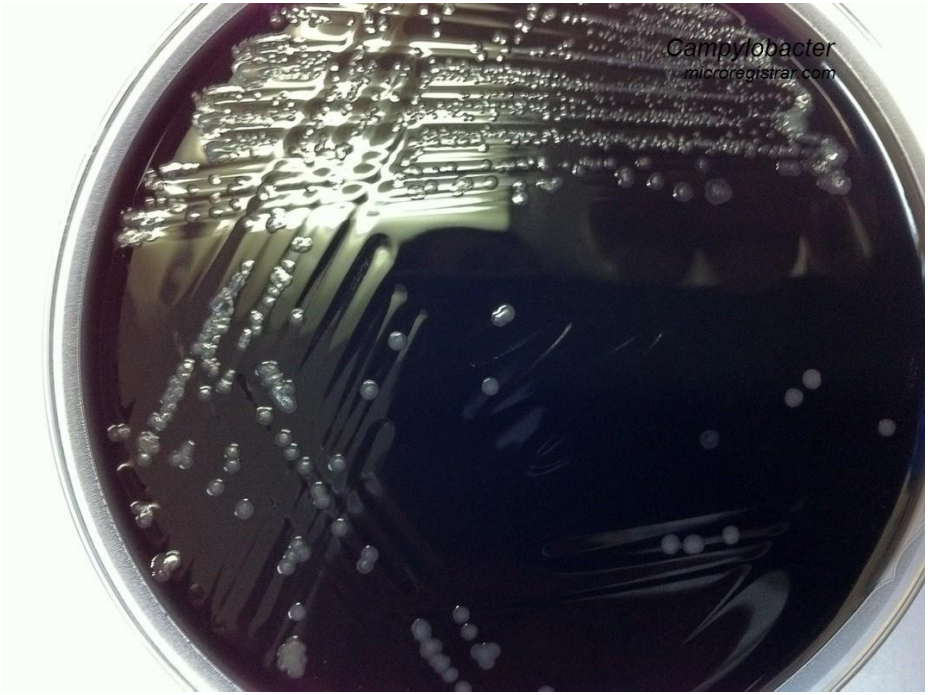
Questions: 1. Which other steps do you suggest?

2. Which other examination do you propose?

Case report 2

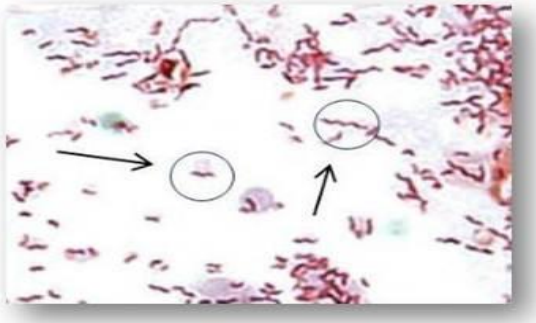
Result of bacteriological cultivation





Cultivation on the selective medium – Karmali agar: 48 hours, using higher temperature (42 °C), anaerobic environment, oxidase +, motility +.

Microscopy: Gram negative, curved rods or short spirals



Case report 2

Questions:

3. Which bacteria is it?
4. what is the source of this infection?
5. Which epidemiological data from the history are significant?
6. The infectious dose required to induce this disease is approximately?
7. The incidence of this bacteria as a causative agent of enteritis in the population decreases or increases ?
8. Describe therapy and other procedures for this patient.
9. Possible complications of this disease?

Case report 3

- Woman, 45 years of age, is coming to the physician ambulance in the morning. She has sudden vomiting in the early morning hours and just now she has also diarrhea – the stool is watery with addition of mucus , without blood.
- traveler's history - negative
- In the ambulance: body temper. – 37,8 °C, the patient does not show signs of dehydration, abdomen slightly sensitive to palpation
- the doctor asks about eating the previous day and she answers:

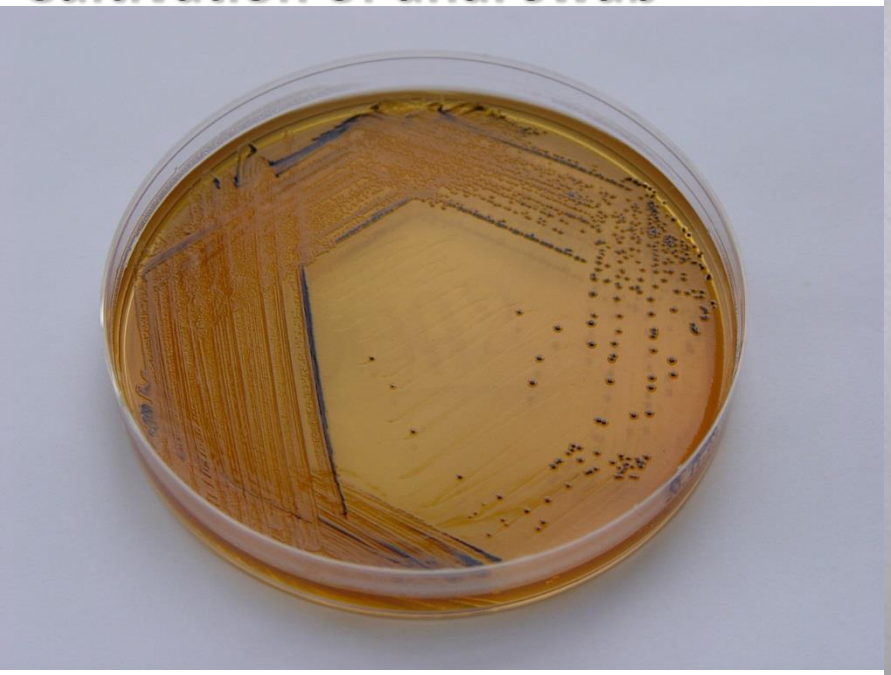
  for lunch was a fried cauliflower from the own garden, homemade mayonnaises and dinner was bread with butter and honey from the private beekeeper.

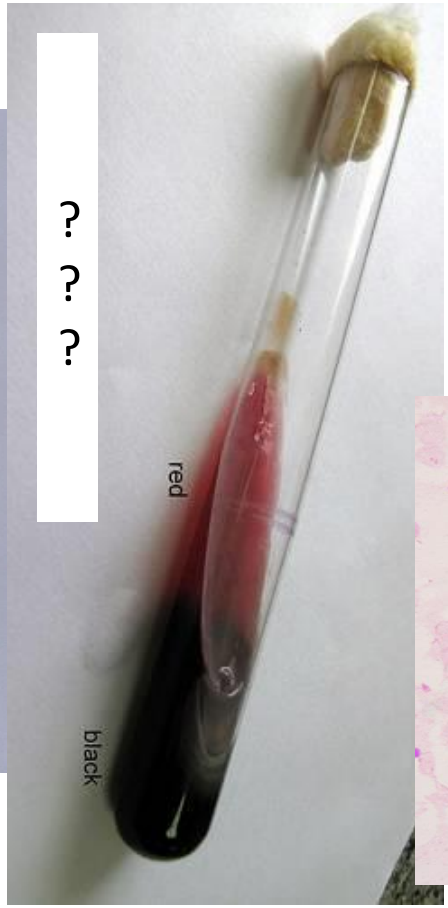
Questions:

1. Which of biological materials we will take in the ambulance of physician and for which laboratory examination?
2. Which bacterium is causative agent of this disesase? What is your first idea? Why?

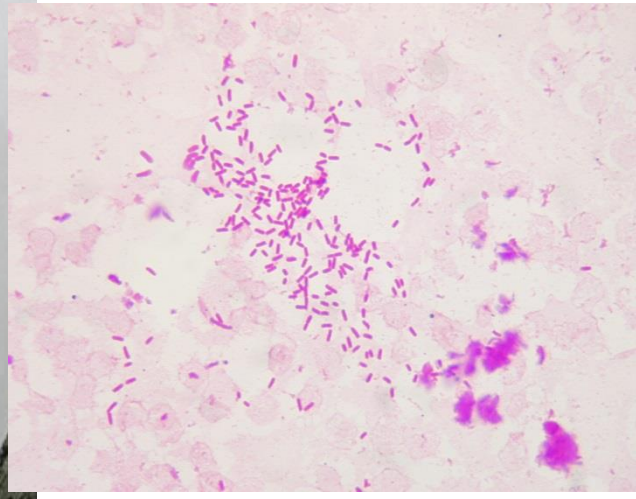
Case report 3

Cultivation of anal swab





Microscopic picture of bacteria from solid medium



Questions:

3. Describe the media used for cultivation and the results of the exam – on the picture

4. Identification of bacterium? Which other tests we add to the first tube?

5. Which other methods we will use for accurate identification of bacterium (serotyp)

Case report 3

Questions:

6. What is the infectious dose of this microbe?
7. What is incubation period?
8. Therapy?
9. Other procedures in the family of patient?
10. Possible epidemiological procedures?

Case report 4

- Boy 1 year of age comes with his parents in January to the ambulance of the clinic for children because he has 1 day of diarrhea with vomiting and high fever, the stool is watery with mucous.

Anamnesis: older sibling (12 years) suffered with mild diarrhea 5 days before (this disease lasted cca 2-3 days).

Traveler´s history - negative

<u>The child in an ambulance</u>:

Body temperature 39,5 °C, fatigue, mild tachycardia (121/min), breathing frequency (35/min), abdomen sensitive to palpation, audible accelerated peristalsis.

<u>Questions:</u>

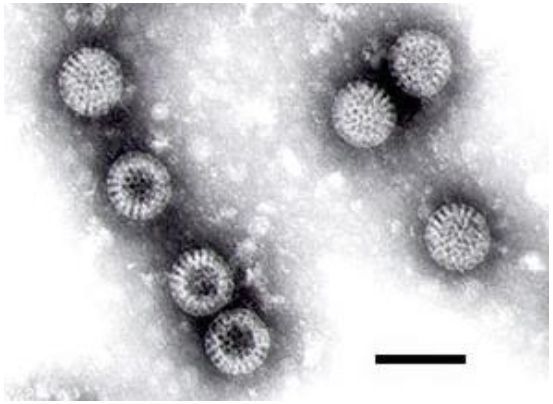
1. Which microorganisms can cause this disease?

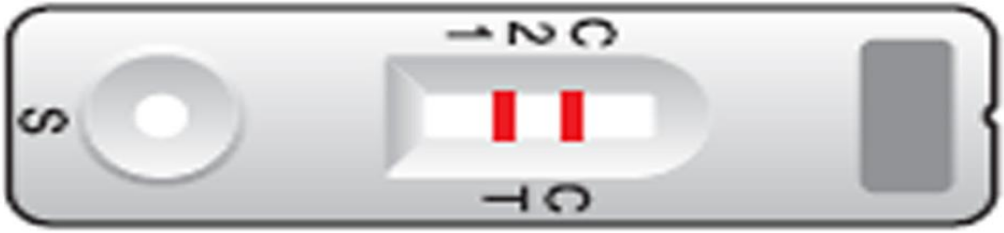
2. Which biological materials we take from patient, which tests we will

Case report 4

- The boy has positive immunochromatographic test - rotaviruses

e.g. Rotaviruses in electron microscopy





Positive result of test

C = the control line is positive (is colored), test is valid

T = the test´s line is colored – result of this test is positive

Case report 4

Questions:

3. In which season infections with rotaviruses occur most frequently in children?
4. How high is the infective dose for rotaviruses?
5. Therapy?
6. What was the likely source of infection for a small patient?
7. How long is the incubation period for rotaviruses?
8. How long are rotaviruses excreted in the stool, and how large is the viral load in the faeces of the affected child in the acute phase?
9. Is there a prevention of this disease?

Case report 5

- A man, 35 years, comes in February to a GP with 8 days lasting diarrheal disease, night temperature was 37,2 – 37,4 °C. Tired, lethargic, several diarrheal stools per day, mucous, yesterday he was scared of blood in the stool and pains in the right lower abdomen.
- The patient is a butcher, now in the season he makes pig slaughters in households and he is tired. He does not travel.
- Body temperature just now in the morning is 37,2 °C; CRP by quick test in the consulting room of practitioner is 30 mg/L, the abdomen sensitive on palpation, practitioner with regard to the patient's occupation prescribes doxycycline and a control in two days at the latest. He takes a rectal swab for bacterial cultivation.

Case report 5

Questions:

1. Which of microorganism can cause this alimentary infection (GIT infection) and what will be in your diagnostic considerations??
2. Why with regard to the occupation of a patient? What is important?
3. Which other microbiological examinations would you make?
4. What is probably the source of infection for the patient?

Case report 5

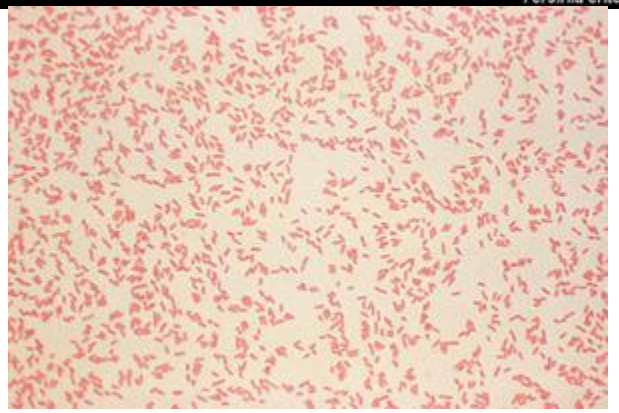
- Identification of the bacterium was done in the laboratory

On the picture is result of cultivation on the special solid medium for Yersiniae - CIN

Microscopy of bacteria from CIN

Aglutination:

Y. enterocolitica O3 +



Case report 5

Questions:

5. Was the therapy correctly selected for the identified bacteria?
6. What is the *Yersinia enterocolitica* infective dose?
7. Period of incubation?
8. Can develop infection of *Yersinia enterocolitica* to the septic form?
9. Which antibiotics do you choose in this case?

Pozn. Solid medium CIN – a name is derived from content of antibiotics (to suppress the growth of other microbes):

Cefsulodin - **I**rgasan - **N**ovobiocin

Case report 6

- The patient - woman, 88 years, is is transferred to the internal department of the district hospital from home for the elderly with 3 days of diarrhea, the stool is watery, is often excreted in small amounts and is free of blood. The patient complains of abdominal pain and twice vomited.
- The patient is immobile, bedridden (confined to bed by sickness or old age), walking only with a rehabilitation nurse, incontinent and in the last 4 weeks repeatedly treated for urinary tract infections.

<u>In an ambulance:</u>

Body temperature 38,4 °C, pulse 85/min, breath 20/min, blood pressure 120/65 mm Hg, badly communicates

<u>Questions:</u>

1. Which examinations and sampling of biological materials will be made without delay?

Case report 6

- Tests of faeces for the presence of toxin and antigen *C. difficile*

2. Evaluate result of the immunochromatographic test on the cassette, as shown in the bottom section of the instruction manual

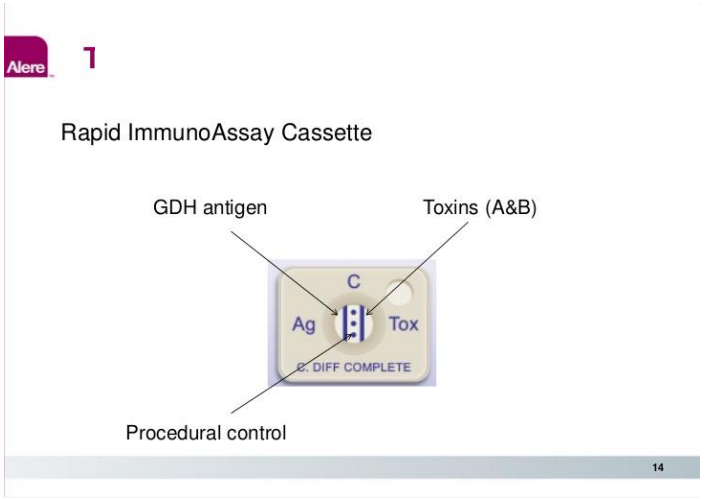
Our patient

Evaluation of the detection of toxin and CDI antigen in faeces

C – control line, must be always colored = control of the test validity

Ag – positive line = antigen CDI is positive (present)

Tox – positive line = the strain is producer of toxins (A~ /+ B)



3. Therapy ?

Case report 6

Results of cultivation:

The stool sample:

Clostridium difficile (sensitive to Metronidazol, Vankomycin, Fidaxomicin)

catheterized urine:

Escherichia coli 10^2

Staphylococcus epidermidis 10^2

Staphylococcus aureus rarely

Questions:

4. Does the patient have a urinary infection again? Which of the microbes is a causative agent ?
5. Is changing of ATB therapy necessary?

Case report 7

- Woman, 30 years of age comes to his doctor with two days of elevated temperature (37,2 °C až 37,5 °C), loss of appetite and nausea, morning vomiting, for several days she hurts her slightly under the right costal arch.
- Traveler's history: Three weeks ago, she returned from a three-month stay in India where she taught English in a school for children of poor parents. Hygienic conditions were terrible. Before traveling, she was vaccinated against: Hepatitis A and B, meningococcal meningitis (A,C), tetanus, she did not take an antimalarial medication - the emergency pack she had with her. The practitioner sends her directly to the ambulance of the Infectious Clinic.
- <u>On the Clinic:</u>

  body temperature 37,4 °C, conjunctiva slightly icteric, abdomen sensitive to palpation – more right; describes a slight headache.

Case report 7

Questions:

1. On which diseases you will be thinking? Which biological materials will you take from a patient?
2. Can clinical signs lead to suspected leptospirosis?
3. What is an emergency package with regard to malaria?

Case report 7

Results of laboratory tests:

- CRP 10
- ALT ↑↑, AST ↑
- In urine bilirubin, other values are normal
- The patient is hospitalized
- Thick and thin blood films for malaria - negative
- PCR for DNA of pathogenic leptospires - negative
- the result of a virological examination:

Detected antibodies against:

hepatitis B virus in the IgG class, hepatitis A virus in the IgG class,

hepatitis E virus in the IgM class is weak positive, in the IgG class borderline value

Case report 7

Otázky:

4. Your diagnosis? And is based on . . . ???
5. Can it be hepatitis A or B??
6. Why is in the result of serological tests for hepatitis E present only borderline titer IgG?
7. What it means "seroconversion" in results of serological tests of infectious diseases?
8. What we can still include in the diagnostic balance of a patient with any hepatitis - in general? Think of a few examples.

Case report 7

Tab. 3 – Akutní virová hepatitida A–E – diferenciální diagnostika

Infekční	Neinfekční
infekce Epstein-Barrové virem	etylická hepatitida
infekce cytomegalovirem	léky indukovaná hepatitida
infekce herpes simplex virem	bylinnými přípravky indukovaná hepatitida
leptospiróza	jiné toxické hepatitidy
Q horečka	autoimunitní hepatitida
žlutá zimnice	ischemická hepatitida
infekce HIV	Wilsonova nemoc
brucelóza	akutní Budd-Chiari syndrom (okluze hepatické vény)
lymeská borrelióza	hepatitida ex graviditate (akutní steatóza, HELLP syndrom, cholestáza)
syfilis	akutní cholecystitida a akutní obstrukce žlučových cest
vzácnější asociace s dalšími infekcemi	malignity