

Pathophysiology lab questions

Laboratory evaluation of gastrointestinal diseases

1. What is the indication of testing the gastric acid secretion?
How is the test performed?

2. A patient has been complaining for epigastric pain and taking antacid drugs for years. The laboratory findings are the following:
BAO: 25 mmol/h
basal gastric juice secretion: 250 ml/h, elevated
MAO: 40 mmol/h
stimulated gastric juice secretion: 280 ml/h
serum gastrin level: 1500 ng/l, significantly increased
The serum gastrin concentration is increased by 70% following secretin injection.
What is the most likely diagnosis? What further tests would you perform?

3. The laboratory findings of a pale patient complaining of dyspepsia are the following:
BAO: too low to measure
MAO: 1 mmol/h
the amount of basal and stimulated gastric juice: minimal
Schilling test: positive
Hb: 88,7 g/l
serum iron: 27 µmol/l
MCV: 98 fl
Ubg: slightly increased
What is your opinion? What further tests would you perform?

4. A patient was diagnosed to have gastric ulcer 8 years ago. His BAO was 3 mmol/h, the MAO was 15 mmol/h at that time. He is complaining of epigastric pain that is getting worse lately. Some of the laboratory findings:
CEA: increased
CA 19-9: increased
Blood in stools (determined by monoclonal human anti-Hb antibody):
repeatedly positive.
What may be the problem with the patient? What further tests are absolutely necessary?

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5. A patient complains of sharp epigastric pain between meals. She has moderate diarrhea, her stools have fatty appearance.

Some of her laboratory findings:

blood in stools: repeatedly negative

the urease breath test: positive.

What further tests would you perform? What is your opinion?

6. A patient complains of periumbilical pain. His blood pressure is low, the heart rate is increased, he is sweating, and has nausea. There is no defense while examining the belly. Laboratory results:

ESR: 42 mm/h

WBC: 11 G/l

serum alpha-amylase: 1800 U/l

urine alpha-amylase: increased

serum lipase: increased

serum ALP: 200 U/l

ASAT: 50 U/l

ALAT: 50 U/l

fasting blood glucose: 6,5 mmol/l.

What further tests would you perform? What is the diagnosis?

7. An obese woman complains of weakness, no appetite, and a dull epigastric pain radiating like a belt. She has lost 6 kgs in the last two months. Laboratory findings:

serum bilirubin: 33 μ mol/l

ASAT: 55 U/l

ALAT: 58 U/l

GGT: 120 U/l

ALP: 350 U/l

ESR: 30 mm/h

fasting blood glucose: 5,8 mmol/l.

What is your opinion? What further tests would you perform?

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8. A breast-fed infant gains no weight, has diarrhea, and is exsiccated.

Laboratory findings:

the pH of the stools: low

D-xylose test: normal

oral glucose tolerance test: negative

H₂ breath test following breast feeding: positive.

What is your opinion?

9. A middle aged woman complains of inflammatory symptoms of the oral cavity, dysphagia, dry mouth. Laboratory findings:

hematological parameters: no abnormality

progesteron and estradiol levels: low

stimulated saliva production: 0,4 ml/min (↓).

What may be the problem with the patient? What further tests are necessary?