Amylase/creatinine clearance ratio measurement

What is this test?

This test calculates the ratio of amylase to creatinine that is filtered by the kidneys. It is used to evaluate pancreatic disease and to screen for a condition called macroamylasemia. This condition occurs when macroamylase (a protein-bound enzyme) builds up in the blood[1][2][3][4].

What are other names for this test?

Amylase/creatinine clearance ratio

What are related tests?

Alanine aminotransferase measurement
Serum lipase measurement
Ultrasonography

Why do I need this test?

Laboratory tests may be done for many reasons. Tests are performed for routine health screenings or if a disease or toxicity is suspected. Lab tests may be used to determine if a medical condition is improving or worsening. Lab tests may also be used to measure the success or failure of a medication or treatment plan. Lab tests may be ordered for professional or legal reasons. The following are possible reasons why this test may be done:

Pancreatitis
Postoperative procedures

When and how often should I have this test?

When and how often laboratory tests are done may depend on many factors. The timing of laboratory tests may rely on the results or completion of other tests, procedures, or treatments. Lab tests may be performed immediately in an emergency, or tests may be delayed as a condition is treated or monitored. A test may be suggested or become necessary when certain signs or symptoms appear.

Due to changes in the way your body naturally functions through the course of a day, lab tests may need to be performed at a certain time of day. If you have prepared for a test by changing your food or fluid intake, lab tests may be timed in accordance with those changes. Timing of tests may be based on increased and decreased levels of medications, drugs or other substances in the body.

The age or gender of the person being tested may affect when and how often a lab test is required. Chronic or progressive conditions may need ongoing monitoring through the use of lab tests. Conditions that worsen and improve may also need frequent monitoring. Certain tests may be repeated to obtain a series of results, or tests may need to be repeated to confirm or disprove results. Timing and frequency of lab tests may vary if they are performed for professional or legal reasons.

How should I get ready for the test?

Venous blood:

Before having blood collected, tell the person drawing your blood if you are allergic to latex. Tell the healthcare worker if you have a medical condition or are using a medication or supplement that causes excessive bleeding. Also tell the healthcare worker if you have felt nauseated, lightheaded, or have fainted while having blood drawn in the past.

Urine:

To prepare for giving a urine sample, be sure to drink enough fluids before the test, unless you have been given other instructions. Try not to empty your bladder before the test.

How is the test done?

A sample of venous blood and urine are collected for this test.

Venous blood:

When a blood sample from a vein is needed, a vein in your arm is usually selected. A tourniquet (large rubber strap) may be secured above the vein. The skin over the vein will be cleaned, and a needle will be inserted. You will be asked to hold very still while your blood is collected. Blood will be collected into one or more tubes, and the tourniquet will be removed. When enough blood has been collected, the healthcare worker will take the needle out.

Urine:

To provide a sample of urine, you will be asked to urinate into a container. Fill the container as much as you can, but do not overfill it. Urine samples may also be taken from a catheter.

How will the test feel?

The amount of discomfort you feel will depend on many factors, including your sensitivity to pain. Communicate how you are feeling with the person doing the test. Inform the person doing the test if you feel that you cannot continue with the test.

Venous blood:

During a blood draw, you may feel mild discomfort at the location where the blood sample is being collected.

Urine:

This test usually causes no discomfort.

What should I do after the test?

Venous blood:

After a blood sample is collected from your vein, a bandage, cotton ball, or gauze may be placed on the area where the needle was inserted. You may be asked to apply pressure to the area. Avoid strenuous exercise immediately after your blood draw. Contact your healthcare worker if you feel pain or see redness, swelling, or discharge from the puncture site.

Urine:

After collecting a urine sample, close the container if it has a lid. Place the container where the healthcare worker asked you to put it. Clean your hands with soap and water.

What are the risks?

Blood: During a blood draw, a hematoma (blood-filled bump under the skin) or slight bleeding from the puncture site may occur. After a blood draw, a bruise or infection may occur at the puncture site. The person doing this test may need to perform it more than once. Talk to your healthcare worker if you have any concerns about the risks of this test.

Urine: A urine test is generally considered safe. Talk to your healthcare worker if you have questions or concerns about this test.

What are normal results for this test?

Laboratory test results may vary depending on your age, gender, health history, the method used for the test, and many other factors. If your results are different from the results suggested below, this may not mean that you have a disease. Contact your healthcare worker if you have any questions. The following are considered to be normal results for this test:

Adults (conventional and standard international units): 1-5 (calculated as amylase clearance divided by creatinine clearance times 100) [5].

What might affect my test results?

Results increased in:

- Burns [6][4]
- Diabetic ketoacidosis [7][6][4]
- Renal insufficiency [7]
- Duodenal perforation [7]

- Post-extracorporeal circulation [7]
- Hyperemesis of pregnancy [7]
- Post-abdominal surgery [6]
- Pancreatic cancer [7]
- Myeloma and light-chain disease [7]
- Marked hemoglobinuria [7]

Results decreased in [7]

- Persons under 30 years of age

What follow up should I do after this test?

Ask your healthcare worker how you will be informed of the test results. You may be asked to call for results, schedule an appointment to discuss results, or notified of results by mail. Follow up care varies depending on many factors related to your test. Sometimes there is no follow up after you have been notified of test results. At other times follow up may be suggested or necessary. Some examples of follow up care include changes to medication or treatment plans, referral to a specialist, more or less frequent monitoring, and additional tests or procedures. Talk with your healthcare worker about any concerns or questions you have regarding follow up care or instructions.

Where can I get more information?

Related Companies

- National Pancreas Foundation

References

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5. Kratz A, Ferraro M, Sluss PM, et al: Case records of the Massachusetts General Hospital: laboratory values. N Engl J Med 2004; 351(15):1549-1563.
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