Name of the test
Ammonia (NH_3)

What is this test used for?
This test is used for quantitative measurement of ammonia (NH_3) in plasma or whole blood.

Ammonia is a waste product of protein metabolism. In the liver, it is converted into urea and urea is then excreted from the body by the kidneys.

If ammonia processing or its elimination from the body is impaired, then the concentration of ammonia may be increased. Excess amounts of ammonia are toxic to the central nervous system – it can cause hepatic encephalopathy, coma and life-threatening complications.

Ammonia level can be increased because of impaired liver function, which in turn can be due to liver cirrhosis or some other liver diseases.

In addition to these reasons, in case of infants, high concentrations of ammonia can be due to deficiency of some enzymes and inherited disorders of ammonia metabolism.

When is the test ordered?
Ammonia test is ordered when the patient has symptoms that suggest a high concentration of ammonia.

This test is often used when diagnosing hepatic encephalopathy and hepatic coma.

Ammonia test is also ordered, when a patient has a liver disease or when Reye syndrome is suspected.

How is this test performed?
For this test, a blood sample needs to be taken from a vein.

How to prepare for the test
No special preparation is required for this test.

Interpretation of results
Test results must be interpreted by a doctor.

In general, increased level of ammonia may be usually caused by its inadequate processing and elimination from the body.

Ammonia level is high, when liver function is decreased, for example, because of liver cirrhosis and liver failure. Ammonia concentration is also high with Reye syndrome.

Ammonia concentration is usually increased in patients with hepatic encephalopathy, however an increase in ammonia levels may not always correlate with the degree of hepatic encephalopathy. Moreover, normal level of ammonia does not exclude the existence of hepatic encephalopathy.

In addition to these reasons, increased ammonia levels may be caused by: excess amount of dietary protein intake, gastrointestinal bleeding, smoking, alcohol.

Some medications may increase ammonia concentration, while others may decrease it.

It is very important that all the guidelines are followed regarding collecting the sample and its transportation. Otherwise, the test results may not be correct.

Sources used:

1. Ammonia | Lab Tests Online. https://labtestsonline.org/tests/ammonia. Accessed 13 July 2021.
2. NH3V - Overview: Ammonia, Plasma. https://www.mayocliniclabs.com/test-catalog/Overview/35130. Accessed 13 July 2021.