

DETECTION OF THE UREASE POSITIVE BACTERIA IN STOMACH BY THE NEW NON-INVASIVE TRANSESOPHAGEAL METHOD WITH THE NH₃-SENSITIVE TUBES

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➔ **Abstract:** One of the methods of non-invasive HP diagnostics is a «breath method». The principle is detecting of ammonia level after taking a portion of urea solution. Increase of ammonia amounts is a result of reaction between urea and gastric urease.

However, some of the oral bacteria has an urease activity and can give false positive result. The new transesophageal method (fig.1) allows decreasing the influence of the oral cavity bacteria to test results.

➔ **Materials and methods:** The study group consisted of 12 patients with confirmed HP status. Each one of the study group has taken by oral a portion of 50 ml 1% urea solution. Amounts of ammonia in mouth-air were determined by two NH₃-sensitive tubes after 5 minutes of urea intake. Air flow through one of the tubes was aspirated during a patient breathe by nose and through the second one when the patient hold their breath. An invasive transesophageal (fig.2) was used as a reference method. That method was based on determination of ammonia amounts in mouth air after irrigation of stomach by 1% urea solution on endoscopic procedure.

➔ **Results:** NH₃ of mouth-air flow has changed color of both of the tubes in 10 cases of 12. In 6 cases colored level of the first tube was higher than of the second one, what probably means presence of urease positive bacteria in a gastric area. A reference method confirmed the presence ($p < 0,0001$) of urea positive bacteria in 9 cases of 12.

➔ **Conclusion:** High sensitivity of a reference method can be explained by a large reaction area urea with urease of gastroduodenal mucosa urease. What can be obtained by irrigation of urea solution. In case of oral taking of substrate solution, it may not contact with enzyme because solution can pass a contaminated area of gastric area.

Evaluation by non-invasive transesophageal method presence of urease positive microflora was ratified by reference method in 100% of cases, what means this method has high predictive value.



Fig.1

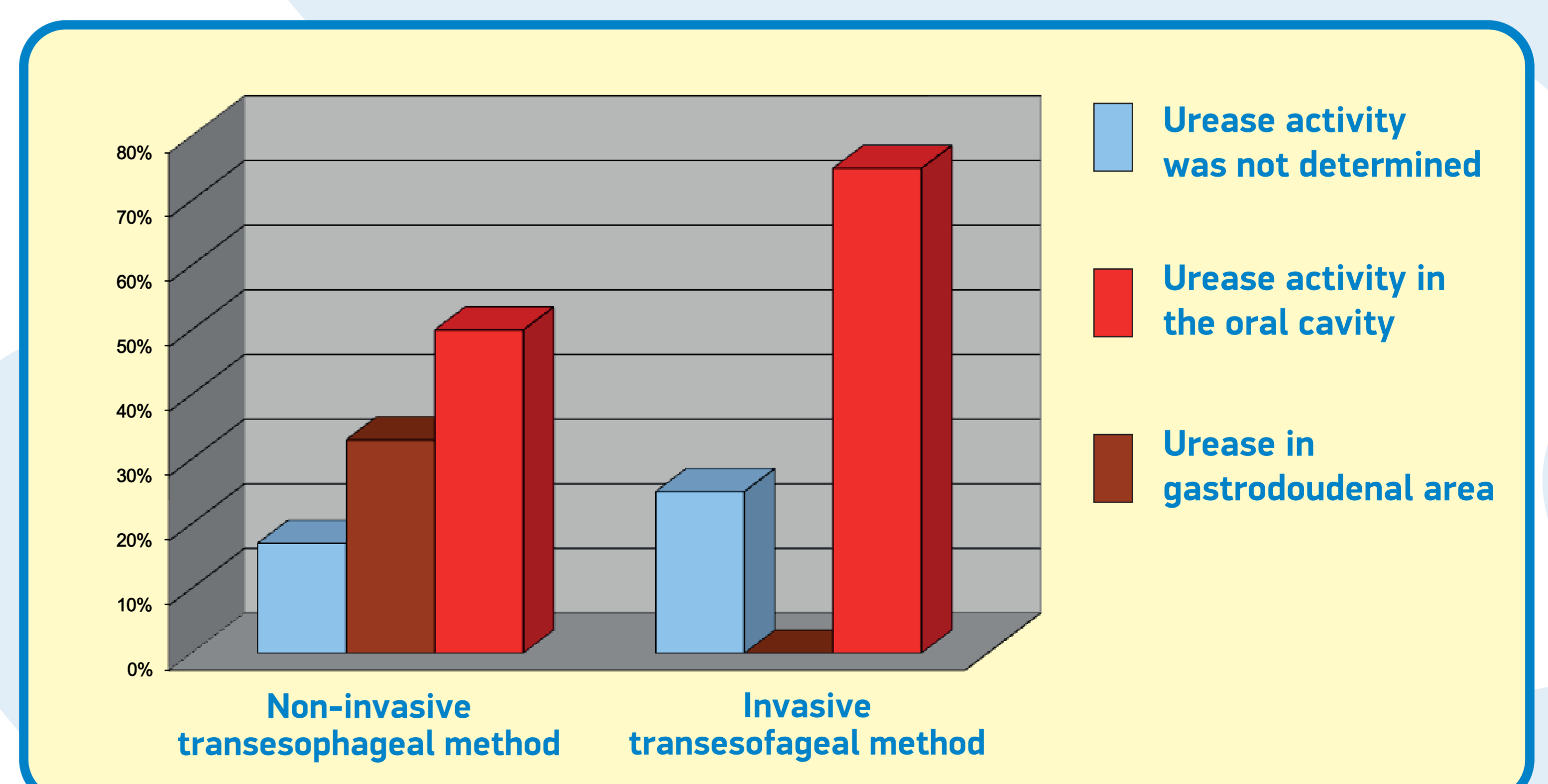


Fig.2