



# AMMONIA EVALUATION IN ORAL CAVITY AS A METHOD FOR EXPRESS DETECTION OF UREALYTIC MICROFLORA IN STOMACH

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➔ **Introduction:** Histological method and breath test with <sup>13</sup>C urea are recommended as the main methods for diagnostic of *Helicobacter pylori* (HP) infection. However, <sup>13</sup>C UBT is not common in use in Russian gastroenterology practice. Therefore, we can use alternative test to diagnose HP. The proposed diagnostic method of urealytic microflora semination stomach doesn't require biopsy. Diagnostic conclusion is formed just after performing stomach endoscopy. The method is based on ammonia production in urea hydrolysis by microbial urease in stomach (fig. 1).

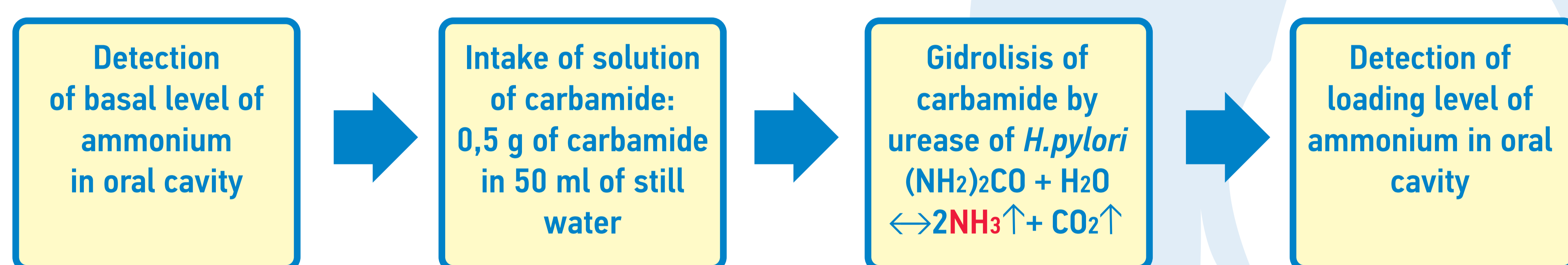


fig. 1

➔ **Aim:** To assess the results of invasive ammonium test for HP diagnosis.

➔ **Materials and methods:** 12 patients with dyspepsia were observed. For all patients verification of HP was made with histologic test with two biopsies (one – from antrum and one – from body of stomach). The choice of a histological method as reference method was dictated by that, using this method, J.R. Warren and B.J. Marshall described existence of helicoid bacterium in a mucous membrane of a stomach of patients with active chronic gastritis. Patients during two weeks before diagnostic did not take any medications, capable to change results of tests (inhibitors of a proton pump, antibiotics, bismuth). For urease activity detection stomach mucosa of each patient were flushed with 50 ml 1% urea solution during the gastroscopy. Before gastroscopy and right after it the ammonia level in the oral cavity of patients was measured within 9 minutes with each registration of concentration values.

➔ **Results:** Nine patients have histologically confirmed HP. Reliable change ( $p < 0.001$ ) of empiric distribution of the ammonia concentration in the oral cavity was found 11 patients, which certifies the start of urea hydrolysis in the presence of urease in stomach (fig. 2, 3).

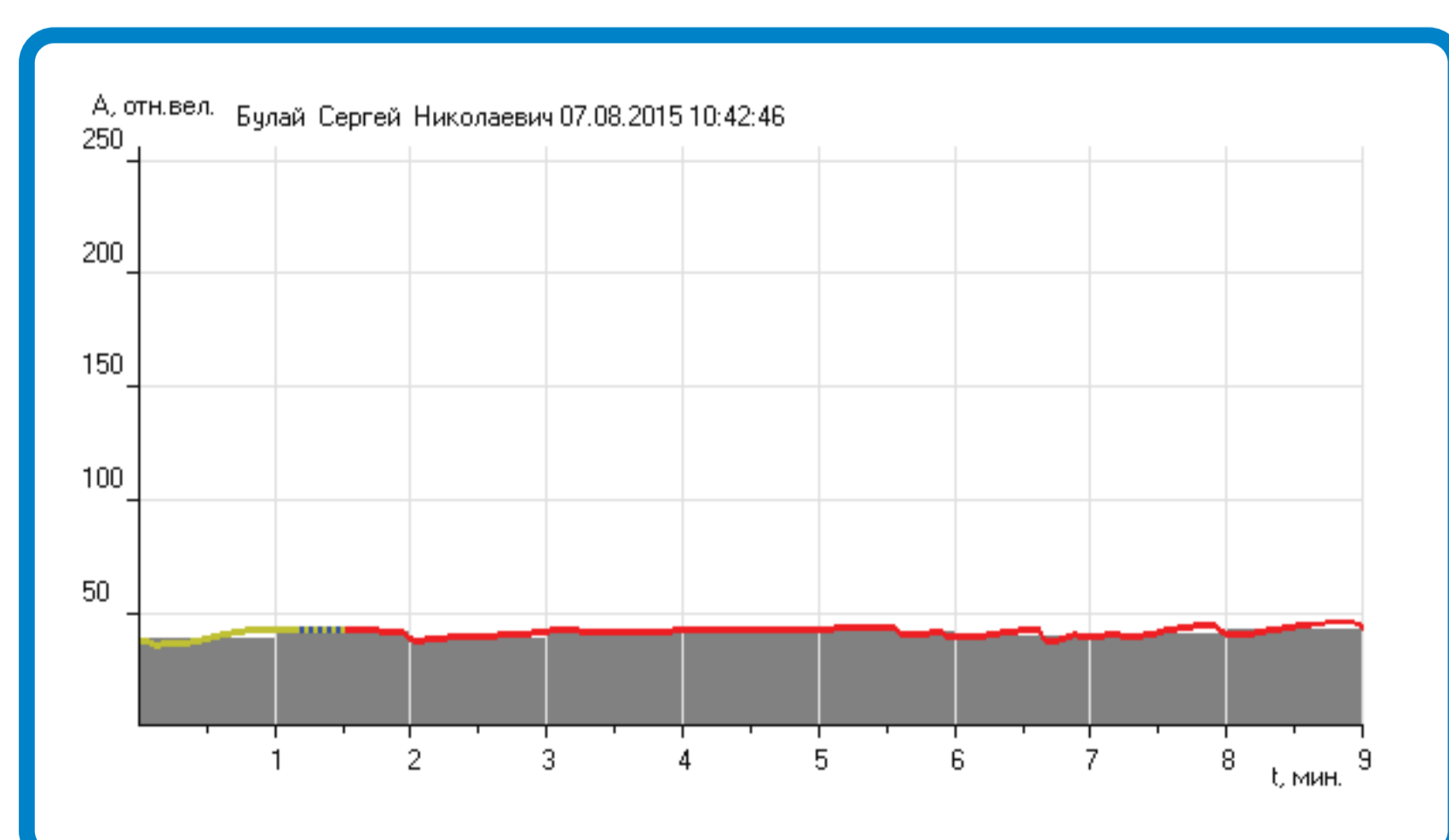


fig. 2

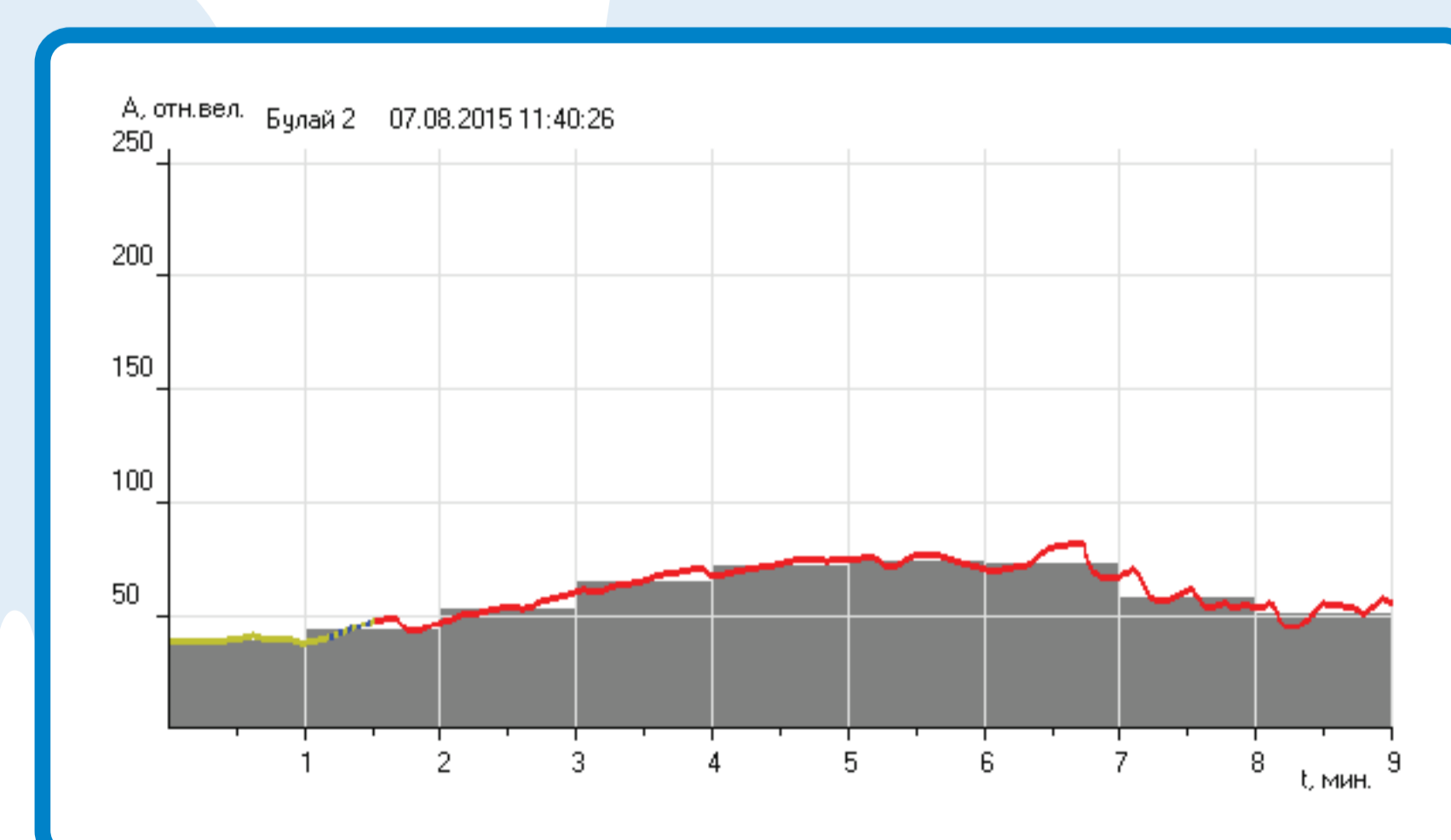


fig. 3

➔ **Conclusion:** Direct exposure on urealytic microflora (including HP) by urea solution in combination with NH<sub>3</sub> concentration control in oral cavity allows obtaining diagnostic results free from target biopsy errors. The proposed invasive express-method is a promising method for detection of urealytic microflora. It also possesses lower cost and time for obtaining diagnostic results.