



# COMPARISON OF $^{13}\text{C}$ UREA BREATH TEST, HELIC AMMONIA BREATH TEST AND HISTOPATHOLOGY IN CHILDREN.

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➡ **Objective:** The  $^{13}\text{C}$  UBT urea breath test (UBT) is a reliable and noninvasive technique which current guidelines recommend for the diagnosis of *Helicobacter pylori* (HP) infection. The diagnostic performance of  $^{13}\text{C}$  UBT (fig.1) in children was those of HELIC Ammonia Breath Test (fig.2) and histopathology.

➡ **Methods:** 67 children (13,6+3,3 y.o.) referred for upper gastrointestinal endoscopic examination because of dyspeptic complaints were studied. The *H.pylori* status was confirmed by histological examination using hematoxylin and eosin. Two biopsy specimens were taken from the antral and corpus mucosa for histopathology. All patients underwent UBT using the Heliforce system (with 50 mg of  $^{13}\text{C}$ -urea) and HELIC ABT (with 500 mg  $^{12}\text{C}$ -urea) on a different day.

➡ **Results:** According to histopathology data 48 (71,6%) patients were diagnosed HP positive, 19 (28,4%) HP negative. Diagnostic cross-section research by Latin square carried out. The Heliforce<sup>TM</sup> method detected HP infection with 22,9% sensitivity and 63,2% specificity, HELIC ABT with 68,7% and 63,2% respectively.

➡ **Conclusion:** The sensitivity of HELIC ABT is higher than of Heliforce<sup>TM</sup>, but not so high enough to be recommended to use as the single method. Only a combination of invasive and non-invasive diagnostic test is the gold standard in primary diagnostics of *Helicobacter pylori* infection in children.



*Fig.1 Heliforce<sup>TM</sup>, Beijing  
Richen-force Science Technology Co., Ltd, China*



*Fig.2 HELIC ABT test, AMA Co LTD, Russia*