Scientific Research Process

Title: Modified *Helicobacter* test using a new test meal and a ^{13}C-urea breath test in *Helicobacter pylori* positive and negative dyspepsia patients on proton pump inhibitors

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1 What did this study explore?

The study explore the sensitivity and specificity of the ^{13}C-urea breath test (UBT) in patients taking proton pump inhibitors (PPIs), using a new test meal Refex.

2 How did the authors perform all experiments?

One hundred and fourteen consecutive patients with dyspepsia, 53 *Helicobacter pylori* (*H. pylori*) positive, 49 *H. pylori* negative, were included in the study. The patients were then given esomeprazole 40 mg for 29 consecutive days, and the ^{13}C-UBT with the new test meal was performed the next morning.

3 How did the authors process all experimental data?

The sensitivity of the ^{13}C-UBT with a cut off 2.5‰ was 92.45% (95%CI: 81.79%-97.91%) by per-protocol (PP) analysis and 78.13 % (95%CI: 66.03%-87.49%) by intention-to-treat (ITT) analysis. The specificity of the ^{13}C-UBT test was 96.00 % in the ITT population (95%CI: 86.29%-99.51%) and 97.96% in the PP population (95%CI: 89.15%-99.95%).

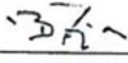4 How did the authors deal with the pre-study hypothesis?

The new test meal based ^{13}C-UBT is highly accurate in patients on PPIs and can be used in those unable to stop their PPI treatment.

5 What are the novel findings of this study?

The new test meal together with a lower cut off overcomes the limitation of standard test meal in patients on PPI therapy

Sincerely,

Name: Bojan Tepes

Signature:_____ Date: May 10 th 2017