



**CALIFORNIA STATE SCIENCE FAIR  
2015 PROJECT SUMMARY**

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| <b>Name(s)</b><br>Mizna Akbar; Dayna Thai  | <b>Project Number</b><br><br>35408 |
| <b>Project Title</b><br><b>Correlation between Helicobacter pylori and Irritable Bowel Syndrome</b>  |                                    |
| <p align="center"><b>Abstract</b></p> <p><b>Objectives/Goals</b><br/>         The hypothesis is that there is a distinct correlation between Helicobacter Pylori infection and a specific type of Irritable Bowel Syndrome (C-constipation, D-diarrhea, or M-alternating). Also, H.pylori may be associated with specific symptoms of Irritable Bowel Syndrome (IBS) or certain comorbid conditions.</p> <p><b>Methods/Materials</b><br/>         62 patients with IBS from a private GI practice were mailed an informational letter asking for their participation along with a questionnaire regarding their IBS symptoms. 14 patients volunteered, and each performed a Urea Breath Test using Urea Breath Analyzer to see if they were H.pylori positive. Data was analyzed to look for correlations between H.pylori and multiple aspects of IBS (symptoms, duration etc.).</p> <p><b>Results</b><br/>         21% (3/14) of the patients were found to be H.pylori positive. The positive patients had either IBS-C or IBS-D. However, none of the positive patients had IBS-M (alternating), while nearly half (5/11) of the negative patients did, which means that there is a possibility that H-Pylori may play a role in IBS-C or IBS-D. There were no clear correlations found between the presence of H.pylori and certain abdominal symptoms or comorbid conditions. The data suggests that symptoms of positive patients were more consistently severe than those of the negative patients. Other small connections were found between H.pylori infection and certain characteristics of IBS, but no distinct correlations could be found.</p> <p><b>Conclusions/Discussion</b><br/>         The hypothesis was not supported by the results. Though the data did not show any distinct correlations between Helicobacter Pylori and Irritable Bowel Syndrome, there were still promising suggestions that there may be an association in certain aspects, such as age, severity, length since diagnosis etc. With this study, an attempt was made to find a correlation between the globally widespread H.pylori infection, one already known as a major cause of peptic ulcer disease, and Irritable Bowel Syndrome, a disorder with a prevalence of about 10% in the US. IBS can be a debilitating disorder, and if treating a bacterial infection can improve patients' symptoms, then it could significantly improve their quality of life.</p> |                                    |
| <b>Summary Statement</b><br>The project involved searching for correlations between Helicobacter Pylori infection and certain aspects of Irritable Bowel Syndrome (IBS), such as a specific type, certain symptoms, or comorbid conditions.  |                                    |
| <b>Help Received</b><br>Assisted by Ambreen Khurshid M.D. from California Gastroenterology Associates in recruiting patients for the study and in administering the Urea Breath Tests  |                                    |