Abstract no.: W5.04
Relevance of Heterotrophic Biofilms on the Agglomeration of *Helicobacter pylori* in Water Environments: Implications for Transmission

**N. F. Azevedo,** *† S. Gião,** † C. Almeida,** †
**I. Fernandes,** *† C. W. Keevil** & **M. J. Vieira***

*IIB – Institute for Biotechnology and Bioengineering, Centre for Biological Engineering, Universidade do Minho, Braga, Portugal; †Environmental Healthcare Unit, School of Biological Sciences, University of Southampton, Southampton, UK*

The role of water and water-associated biofilms on the transmission of *Helicobacter pylori* has been under debate for the last 10 years. We have previously shown that the ability of this bacterium to form monospecies biofilms when exposed to water is quite limited. However, molecular detection methods have been used to demonstrate that *H. pylori* is present in water microenvironments. Here, we have tested the cultivability and viability of several strains of *H. pylori* in water under different conditions to check whether a large increase in cultivability could be observed. Interestingly, the absence of light during water exposure appeared to be highly beneficial for a longer cultivability of the bacterium, with the ability of some strains to form colonies increasing from 24 to 96 hours. Nevertheless, recovering the bacterium from heterotrophic environments continues to pose a challenge, even when using selective culture media. Hence, we have applied specific PNA fluorescent in situ hybridization probes to detect the presence of the bacterium on heterotrophic biofilms. Results show that *H. pylori* is able to form aggregates within biofilm structures under several conditions (high and low shear stress, 15 °C and 20 °C, addition of carbon source). Addition of chlorine, however, inhibited the formation of these *H. pylori* agglomerates, and the bacterium was found to be more evenly dispersed along the support. This work suggests that the implementation of chlorine as a disinfection method has hindered the transmission of the pathogen and hence is partly responsible for the decreased prevalence observed in the more developed countries.

Abstract no.: W5.05
Acquisition time of *Helicobacter pylori* Infection and Trial of Prevention in Early Childhood in Japan

**M. Okuda,** *† E. Miyashiro,** *† A. Noriyuki,** *† H. Oomatsu,** *† T. Tsuji,** † Y. Fukuda,** † T. Fujioka** & **T. Nakazawa***

*Department of Pediatrics, Wakayama Rosai Hospital, Wakayama City, Japan; †Department of Pediatrics, Hidaka General Hospital, Gobo, Japan; ‡Clinical Nutrition and Health Science, Hyogo College of Medicine, Nishinomiya, Japan; ‡Department of Gastroenterology, Oita University Faculty of Medicine, Oita, Japan; †Yamaguchi University School of Medicine, Ube, Japan*

Introduction. It is known that the acquisition of *Helicobacter pylori* occurs in childhood, and mouth-to-mouth infection is suggested one of the transmission routes. We examined the age of the acquisition and tried to prevent of infection.

**Subjects and Methods.** Study 1 is based on Japanese children who were born in Wakayama Rosai Hospital from February 2001 to April 2002. Similarly, study 2 (preventive study) is based on children who were born from July 2004 to March 2006. At the 1-month health check, parents were asked to participate to the study. In the preventive study, parents were asked to stop premastication of baby food. Stool samples of 237 and 145 infants were mailed at the age of 4 months. The number of children supplying samples gradually decreased. Stool samples of children at intervals of 4-6 months were collected. *H. pylori* antigen was determined by a stool antigen test (HpSA: Premier Platinum HpSA).

**Results.** Study 1: The rate of HpSA-positives of children at 4, 8, 12, 18, and 24 months was 3.8% (9/237), 4.8% (9/189), 6.3% (9/142), 6.3% (8/126), and 3.8% (5/108), respectively, and finally, five children infected with *H. pylori*. Four of five children acquired the infection in the first years of life and a child acquired at 30 months. Study 2. The rate of HpSA positivity in children at 4, 8, 12, and 18 months was 24.1% (35/145), 9.2% (11/120), 3.1% (3/97), and 0% (0/50), respectively.

**Conclusions.** Acquisition of *H. pylori* infection in Japan occurs in infant and the prevention is most important in infancy.

Abstract no.: W5.06
Does *Helicobacter pylori* Infection Impact on Life Expectancy?

**N. Salles,** *† A. Jehanno,** † A. Buissonniere,** †
**L. Letenneur,** † J. F. Dartigues** & **F. Mégraud***

*Hôpital Xavier Arnaoz, Pessac, France; †INSERM U-853 University Victor Segalen, Bordeaux, France; ‡INSERM U-593 University Victor Segalen, Bordeaux, France*

A lower prevalence of *Helicobacter pylori* infection is always found in elderly subjects compared to late adulthood and is usually explained by the development of atrophy in this particular population. However, an alternative hypothesis is that *H. pylori*-infected subjects may die prematurely as a result of various comorbidities. The aim of the study was to evaluate the impact of *H. pylori* infection on mortality and comorbidity rate in the elderly.

**Patient-methods.** A cohort of subjects older than 65 (PAQUID) has been followed since 1988 in southwest of France. Sociodemographic status, comorbidities, and mortality rate over