World Journal of Gastroenterology

Submit a Manuscript: http://www.wjgnet.com/esps/
Help Desk: http://www.wjgnet.com/esps/helpdesk.aspx
DOI: 10.3748/wjg.v6.iSuppl3.20

World J Gastroenterol 2000 September 15; 6(Suppl 3): 20
ISSN 1007-9327 (print) ISSN 2219-2840 (online)

Alterations in gastric mucin synthesis by *Helicobacter pylori*

James C Byrd, Robert S Bresalier

James C. Byrd, Robert S Bresalier, Gastrointestinal Cancer Research Laboratory, Henry Ford Health Sciences Center, Detroit MI 48202, United States

Robert S. Bresalier, Department of Medicine, University of Michigan School of Medicine, Ann Arbor, MI, United States

Author contributions: All authors contributed equally to the work.

Supported by the Research Service of the Henry Ford Health Sciences Center and Research Foundation (JCB, RSB) and National Cancer Institute, Grant R01 CA69480 (RSB)

Correspondence to: Robert S Bresalier, MD, Gastrointestinal Cancer Research Laboratory, Henry Ford Health Sciences Center, 2799 West Grand Blvd., Detroit MI 48202, United States
Telephone: +1-313-916-046
Fax: +1-313-9169487

Received: May 12, 2000
Revised: June 28, 2000
Accepted: July 10, 2000
Published online: September 15, 2000

Abstract

AIM: To determine the role of *Helicobacter pylori* in altering gastric mucin synthesis and define how this process relates to *H. pylori*-related diseases.

METHODS: Analyses of human gastric tissues using immunohistochemistry and in situ hybridization document the role of *H. pylori* in altering the composition and distribution of gastric mucins.

RESULTS: These data indicate a decrease in the product of the MUC5 (MUC5AC) gene and aberrant expression of MUC6 in the surf ace epithelium of *H. pylori*-infected patients. A normal pattern was restored by *H. pylori* eradication. Inhibition of mucin synthesis including MUC5AC and MUC1 mucins by *H. pylori* has been established *in vitro* using biochemical and Western blot analyses. This effect is not due to inhibition of glycosylation, but results from inhibition of synthesis of mucin core structures. In vitro experiments using inhibitors of mucin synthesis indicate that cell surface mucins decrease adhesion of *H. pylori* to gastric epithelial cells.

CONCLUSION: Inhibition of mucin synthesis by *H. pylori in vivo* can disrupt the protective mucous layer and facilitate bacterial adhesion, which may lead to increased inflammation in the gastric epithelium.

Key words: Mucins; Glycoproteins; Gastric mucin/biosynthesis; Gastric mucosa; *Helicobacter pylori*; Glycosylation; *In vitro*; Immunohistochemistry; *In situ* hybridization

Byrd JC, Bresalier RS. Alterations in gastric mucin synthesis by *Helicobacter pylori*. *World J Gastroenterology* 2000; 6(Suppl 3): 20 Available from: URL: http://www.wjgnet.com/1007-9327/full/v6/iSuppl3/20.htm DOI: http://dx.doi.org/10.3748/wjg.v6.iSuppl3.20

E- Editor: Hu S

Published by **Baishideng Publishing Group Inc**
8226 Regency Drive, Pleasanton, CA 94588, USA
Telephone: +1-925-223-8242
Fax: +1-925-223-8243
E-mail: bpgoffice@wjgnet.com
Help Desk: http://www.wjgnet.com/esps/helpdesk.aspx
http://www.wjgnet.com