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Mother-to-infant transmission of hepatitis-C virus (HCV) - A prospective study

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► **To cite this version:**

Armand Abergel, T. Bortuzzo, P. Martin, B. Aublet-Cuvelier, M. Meyer, et al.. Mother-to-infant transmission of hepatitis-C virus (HCV) - A prospective study. 95. Annual meeting of the American Gastroenterological Association, American Association for the Study of Liver Diseases (AASLD). USA., Mar 1994, New Orleans, United States. hal-01993346

HAL Id: hal-01993346

<https://hal.science/hal-01993346>

Submitted on 4 Jun 2020

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113699/S

April 1994 Volume 106 • Number 4

Supplement to

Gastroenterology

**Digestive Disease Week
and the
95th Annual Meeting of the American
Gastroenterological Association**

May 15-18, 1994, New Orleans, Louisiana

**Program of the Annual Meeting of the American
Gastroenterological Association, the American
Association for the Study of Liver Diseases, the
Gastroenterology Research Group, the Society for
Surgery of the Alimentary Tract, and the American
Society for Gastrointestinal Endoscopy**

**Abstracts of Papers Submitted to the American
Gastroenterological Association**

**Abstracts of Papers Submitted to the American
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ABSTRACTS OF PAPERS SUBMITTED TO THE AMERICAN ASSOCIATION FOR THE STUDY OF LIVER DISEASES

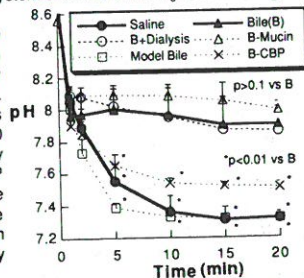
● INHIBITORS OF CALCIUM CARBONATE(CaCO₃) CRYSTALLIZATION IN HUMAN GALLBLADDER BILE: RELATIVE SIGNIFICANCE OF MUCUS GLYCOPROTEIN, CALCIUM BINDING PROTEIN(CBP), AND OTHER POSSIBLE INHIBITORS.

Masato Abei, Naomi Tanaka, Kazuko Kanitani, Shinji Tomita, Takashi Yamaguchi*, Junichi Shoda, Yasushi Matsuzaki, Toshiaki Osuga. Dept. of Gastroenterology, Institute of Clinical Medicine, University of Tsukuba, and *Dept. of Gastroenterology, National Mito Hospital, Ibaraki, JAPAN.

Recent studies on gallstone(GS) pathogenesis have clearly shown the presence of inhibitory activity for CaCO₃ crystallization(IA-CaCO₃) in human bile and the reduction of such activity in GS patients(Gastroenterology 103:552,1992). Candidate factors responsible for the IA-CaCO₃ include calcium binding protein(CBP)(J Clin Invest 84:1990,1989), mucus glycoprotein(Dig Dis Sci 38:909,1993), or other biliary components interacting with Ca⁺⁺(lipid aggregates, bile acids, etc.). It is not yet clear which of these is primarily responsible for the net IA-CaCO₃ in bile. **AIM:** The present study aims to clarify relative significance of these candidate inhibitors. **METHODS:** Gallbladder biles(n=12, w or w/o GS) showing potent IA-CaCO₃ were subjected to 1) ultrafiltration removal of mucin(MW cut off: 300 kD or 30 kD), 2) dialysis removal of bile acids(MW cut off: 5 kD), 3) precipitation removal of CBP(by 1M CaCl₂-addition followed by centrifugation/dialysis), 4) delipidation (by diethylether), or 5) gel filtration separation(Sepharose 4B). Also, 6) model bile solutions of similar lipid compositions were constructed. Effects of these samples(50 µl) on CaCO₃ crystallization were compared with those of untreated biles in an assay system of 25mM NaHCO₃/16mM CaCl₂(1:1) (Hepatology 14:701,1991).

RESULTS: CaCO₃ crystallization *in vitro*, as monitored by pH decline(Fig) and turbidity increase, was completely inhibited by addition of native bile(B). This potent IA-CaCO₃ of bile was neither affected by ultrafiltration(300 kD or 30 kD filters), dialysis, nor by delipidation. Contrary, removal of CBP resulted in marked reduction in the biliary IA-CO₃. Also, artificial bile solution did not show IA-CaCO₃. Upon gel filtration, the IA-CaCO₃ was mainly recovered in the lower MW fractions.

CONCLUSIONS: These results excludes major roles of proteins >30 kD (including mucin) or biliary lipids as the inhibitor and suggest that the small CBP is the primary source of the inhibitory activity for CaCO₃ crystallization in bile.



MOTHER TO INFANT TRANSMISSION OF HEPATITIS C VIRUS (HCV). A PROSPECTIVE STUDY. A. Abergel, T. Bortuzzo, P. Martin°, B. Aublet-Cuvelier #, M. Meyer °, F. Quainon °°, R.Césaire °°, C. Rallièrè °°, E. Subtil °°, Y. Glanddier #, F. Denis °, G. Bommelaer . Service d'Hépatogastroentérologie, # Service d'Epidémiologie, ° Service de Pédiatrie, °° Centre Régional de Transfusion Sanguine, Hotel Dieu, BP 69, 63000 Clermont Ferrand ; ° Laboratoire de Bactério-Virologie, Limoges.

If the parenteral route is the main source of transmission of the HCV, the origin of the contamination remains unknown in 30% of the cases. Three modes of transmission are being evaluated : sexual, horizontal and mother to infant. There are few prospective studies on mother to infant transmission and there results are contradictory.

We have studied 4410 pregnant women from 8 public and private maternities of our area. 33 were anti-HCV positive (ELISA II, Ortho diagnostics systems). 23 were RIBA-4 positive and 10 were indeterminate. All were HIV negative. 28 pregnant women and their babies were followed every 3 months after delivery. Transaminases, anti-HCV and nested PCR were performed at every consultation. The mean follow-up was 8,6 ± 2 months (m ± SD). At birth, 3 newborns were RIBA-4 negative, 19 were positive and 6 were indeterminate. At 3, 6, 9 and 12 months ; RIBA-4 was positive respectively in 53% (10/19), 53% (10/19), 12% (2/17) and 0% (0/14). 26 mothers were tested at delivery by nested PCR, 12 (46%) were positive. HCV RNA was positive in 2 newborns. The first one was HCV RNA positive at birth on the umbilical cord blood and negative on peripheral blood at birth and at 3 months. His ALAT were elevated at 3 (1,2 N) and 6 (2,5 N) months and normal at 9 months. His RIBA-4 was positive at birth and indeterminate at 3, 6 and 9 months. His mother was positive on nested PCR. The second one was positive at birth on nested PCR on peripheral blood. He was lost to follow-up. This study showed that : 1) mother to infant transmission of HCV exists and is low (2/26 = 7,7%), 2) this route of transmission is only recognized by PCR.

A bullet before the title of an abstract signifies that the abstract is intended, at press time, for oral or poster presentation during Digestive Disease Week.