

Hepatitis B in Aboriginal Populations in the Arctic: Alaska Natives, Canadian Inuit and First Nations Peoples, Greenland Inuits and Russian Native Populations

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Update:

Hepatitis B infection occurs at high and endemic rates in Arctic populations. For example research has shown that 3-5% of individuals residing in the Canadian North, 5-14% of Inuit in Greenland, and 3-10% of Alaska Native people in Western Alaska are infected with hepatitis B virus (HBV) and likely, if left untreated 10-25% will develop liver cancer or die of cirrhosis. Researchers from the US, Canada, Greenland, Denmark, and the Russian Federation have formed a Circumpolar Viral Hepatitis Working Group and are conducting studies to determine the epidemiology of chronic HBV in Aboriginal populations (EOI #1109). The study monitors patients to determine disease progression, examine demographic characteristics associated with disease outcome, examine environmental factors associated with disease outcome including contaminants in the environment and subsistence foods, and examine cofactors such as alcohol intake, obesity and metabolic syndrome, examine viral characteristics such as genotype, and viral loads and mutations that could affect disease outcome. This study allows the identification of barriers to vaccination, the development of registries for research and clinical management and the development of criteria to identify potential treatment candidates, monitoring of treatment outcome and the examination of the role of factors such as demographics, viral genotype, and environmental factors in treatment outcome. Already this research group has identified a new HBV sub-genotype (B6) which is only found in indigenous populations of Alaska Canada, and Greenland (Sakamoto et al, 2007), and assisted Greenland in the investigation of an outbreak of hepatitis D superinfection in adolescents with chronic HBV in a community in Greenland (Borresen et al, 2010). In addition this working group has been instrumental in encouraging the Greenland government to adopt universal childhood hepatitis B vaccination in Greenland.

Sakamoto, T., Y. Tanaka, J. Simonetti, C. Osiowy, M.L. Borresen, A. Koch, F. Kubanov, M. Sugiyama, G.Y. Minuk, B.J. McMahon and M. Mizokami, 2007. Classification of hepatitis B virus genotype B into two major forms based on characterization of a novel subgenotype in the Arctic indigenous populations. *J. Infect. Dis.*, 196: 1487-92.

Borresen, M.L., O.R. Olsen, K. Ladefoged, B.J. McMahon, H. Krarup and A. Koch, 2010. Hepatitis D outbreak in a HBV hyper endemic settlement in Greenland. *J. Viral Hepatitis*, in press.

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