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Hepatitis B Outbreak in EEG Clinics in Toronto

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At the recent meeting of the American Society for Microbiology in Miami Beach, Florida, M. Fearon and coinvestigators described one of the largest reported outbreaks of hepatitis B virus infection linked to a healthcare facility, involving 75 patients. In January 1996, the investigation of several cases of hepatitis B cases in Toronto, Ontario, Canada, led to the identification of having an electroencephalogram (EEG) at one of several EEG clinics as a common link. Although recommendations were issued in 1991 for the use of disc electrodes, several clinics continued to use intradermal (needle) electrodes until January 1996. All the clinics were under the direction of the same physician with one technician performing all of the EEGs.

An investigation was conducted in March 1996, and all 18,567 patients who had attended these clinics between 1990 and 1996 were contacted by mail and offered testing for hepatitis B. Of the 18,567 patients contacted, 7,942 were tested for hepatitis B surface antigen (HBsAg), surface antibody (anti-HBs), and core antibody (anti-HBc) and, if needed, hepatitis B e-antigen, anti-HBe, and anti-core IgM. A total of 75 patients met the case definition for the outbreak; 71 were HBsAg positive. All cases occurred on different days, and not all had attended the same clinic.

Subtyping and viral sequencing was done on 25 of the 71 cases that were found to be HBsAg positive. The subtying and sequencing did not support patient-to-patient transmission. However, a group of six patients had virus identical to that of the clinic technician (who was both HBsAg and HBeAg positive). This virus (subtype ayw2) was distinctly different from the chronic carriers or any of the community controls. Investigations at the clinics revealed that infection control measures did not meet existing standards for needle electrode handling and sterilization and the use of gloves during these procedures. Patients also reported bleeding of the scalp after electrode insertion.

The investigators point out that this outbreak has implications for the current recommendations of HBeAg-positive healthcare workers and invasive procedures and conclude with stressing the importance of hepatitis B vaccination of all healthcare workers.

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