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Investigation of the First Case of Guillain-Barré Syndrome Associated with Consumption of Unpasteurized Milk — California, 2008

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Background: Guillain-Barré syndrome (GBS) is a rare, potentially fatal, autoimmune neuropathy. Campylobacteriosis precedes $\leq 40\%$ of cases. In prior reports campylobacteriosis, but not GBS, has been associated with unpasteurized milk consumption. In May– June 2008, 15 persons experienced gastroenteritis after drinking unpasteurized milk from a cow-leasing program. Stool cultures from three patients yielded *Campylobacter*. The program closed after a patient experienced GBS. We evaluated the potential association between this case and unpasteurized milk consumption.

Methods: We reviewed the patient's medical records and interviewed her husband to assess symptoms and exposures. We tested a 6-week-old unpasteurized milk sample, obtained from the cow-leasing program and partially consumed by the patient, by multilocus sequence typing (MLST) for *Campylobacter jejuni* DNA, and by polymerase chain reaction (PCR) and sequencing for genes encoding the bacterial membrane component lipooligosaccharide (LOS) in GBS-associated *C. jejuni*. We tested the patient's serum for antibodies to this LOS by sodium dodecyl sulfate polyacrylamide gel electrophoresis immunoblot.

Results: The patient, a female aged 52 years, experienced self-limiting febrile gastroenteritis 3 days after first drinking the unpasteurized milk. Eleven days later, she was hospitalized with progressive paresis. A peripheral nerve biopsy confirmed GBS. She was mechanically ventilated for 12 weeks and discharged with residual paresis. The patient's stool, cultured after she received antibiotics, was negative. In the milk sample, MLST detected *C. jejuni* DNA; PCR and sequencing identified *C. jejuni* sialyltransferase III gene encoding LOS in GBS-associated *C. jejuni*. Immunoblot testing identified serum antibodies to this LOS.

Conclusions: Laboratory and epidemiologic evidence established the first reported association between GBS and unpasteurized milk consumption. This case highlights the need for public awareness concerning the risk for severe illness from consuming unpasteurized milk.