

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

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**Word count 275; word limit 275**

**Background:** Guillain-Barré Syndrome (GBS) is a rare, potentially fatal autoimmune neuropathy. Up to 40% of cases are preceded by campylobacteriosis. Campylobacteriosis, but not GBS, has been associated with consumption of unpasteurized milk and milk products. In May–June 2008, 15 persons developed acute gastroenteritis after drinking unpasteurized milk from a cow-leasing program in California. Stool cultures from three patients all yielded *Campylobacter*. The cow-leasing program closed immediately after a patient was diagnosed with GBS. We evaluated the potential association between this case and unpasteurized milk consumption.

**Methods:** We reviewed the patient's medical record and interviewed her husband to assess her symptoms and exposures. We used polymerase chain reaction (PCR) and multilocus sequence typing (MLST) to test a six-week-old unpasteurized milk sample, obtained from the cow leasing-program and partially consumed by the patient, for genes encoding the bacterial membrane component lipooligosaccharide (LOS) in GBS-associated *Campylobacter jejuni*. We used an SDS-PAGE immunoblotting assay to test the patient's serum for antibodies to this LOS.

**Results:** The patient, a 52-year-old female, developed acute febrile gastroenteritis three days after first drinking the unpasteurized milk. Eleven days later, she was hospitalized with progressive paresis and mechanically ventilated for 12 weeks. A peripheral nerve biopsy confirmed GBS. The patient's stool, cultured after she received antibiotics, was negative. Milk testing by PCR and MLST detected *C. jejuni* sialyltransferase III gene, which encodes LOS in GBS-associated *C. jejuni*. Immunoblot testing identified serum antibodies to this LOS.

**Conclusions:** Combined 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 of severe illness from consuming unpasteurized milk and milk products.

**Keywords:** *Campylobacter*, Guillain-Barré Syndrome, unpasteurized milk, molecular epidemiology, disease outbreak