

Neurologic Symptoms and Neuropathologic Antibodies among Poultry Workers Exposed to Campylobacter jejuni

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Background: Campylobacter jejuni infection is a risk factor for neurologic sequelae including Guillain-Barré Syndrome. Broiler chicken flocks are regularly colonized with Campylobacter and poultry workers may be at excess risk for Campylobacter exposure. Currently, there are no published studies on Campylobacter-associated neurologic sequelae among workers occupationally exposed to Campylobacter in the poultry industry.

Objectives: Our primary objective was to evaluate associations between occupational exposure to live poultry with Campylobacter exposure, Campylobacter-associated neurologic symptoms and neuropathologic antibodies.

Methods: Questionnaires, serum samples and stool specimens were collected from 20 poultry workers and 40 community referents. Campylobacter exposure was evaluated by stool culture and serum antibodies; neurologic symptoms were assessed by questionnaire; and neuropathologic antibodies were measured by serum anti-ganglioside antibody titers.

Results: Poultry workers had significantly higher anti-Campylobacter IgG titers compared to referents ($p < 0.05$); they were significantly more likely to report multiple Campylobacter-associated neurologic symptoms ($p < 0.05$); and male workers had a higher point risk estimate for detectable anti-ganglioside IgG titers ($p = 0.07$) compared to male referents.

Conclusions: Poultry workers may be at increased risk of Campylobacter-associated neurologic sequelae due to their occupational exposure to Campylobacter in the broiler chicken environment.

Biography:

Dr. Price is the Director of Pathogenesis and Molecular Diagnosis of Infectious Diseases at the Johns Hopkins School of Medicine (Bayview). He earned a bachelor's degree in microbiology and a master's degree in biology from Northern Arizona University. He completed his doctoral research on microbial risks associated with industrial broiler production at the Johns Hopkins Bloomberg School of Public Health as a Center for a Livable Future Predoctoral Fellow. Dr. Price's current research interests include bacterial colonization and infection in the clinic and the community as well as antibiotic resistant bacteria arising from antibiotic use in food animal production.
