



Closing the Brief Case: Postinfectious Glomerulonephritis as an Unexpected Sequela of Drinking Raw Milk

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KEYWORDS *Campylobacter*, glomerulonephritis

ANSWERS TO SELF-ASSESSMENT QUESTIONS

1. Which of the following is a risk factor for campylobacteriosis?
 - a. Camping
 - b. Swimming in a chlorine-treated pool
 - c. Ingestion of unpasteurized milk
 - d. Ingestion of fried chicken

Answer: c. Ingestion of unpasteurized/raw milk is a risk factor for campylobacteriosis. Camping and swimming in adequately chlorinated pools are not risk factors, but ingestion of untreated or inadequately treated water during these events would be a risk factor. Ingestion of fried chicken, assuming it is properly cooked, is not a risk factor. However, ingestion of undercooked poultry is a risk factor.

2. Most *Campylobacter* selective agars are selective only for which two species?
 - a. *Campylobacter jejuni* and *Campylobacter coli*
 - b. *Campylobacter coli* and *Campylobacter lari*
 - c. *Campylobacter jejuni* and *Campylobacter lari*
 - d. *Campylobacter jejuni* and *Campylobacter upsaliensis*

Answer: a. Cefoperazone, a cephalosporin antibiotic found in most *Campylobacter* selective agars, is inhibitory to most *Campylobacter* spp. The majority of strains of *C. jejuni* and *C. coli* are resistant to cefoperazone and will grow on selective media; however, susceptible strains have been reported.

3. Which biochemical test can be used to differentiate *Campylobacter jejuni* from other clinically relevant *Campylobacter* species?
 - a. Oxidase
 - b. Catalase
 - c. Motility
 - d. Hippurate hydrolysis

Answer: d. *C. jejuni* is positive for hippurate hydrolysis, while other clinically relevant *Campylobacter* species are negative. *Campylobacter avium* is also hippurate positive but is rarely encountered in clinical specimens. Multiple species of *Campylobacter* are catalase positive, and all *Campylobacter* species are positive for oxidase and motility.

Citation Whitworth MS, Pence MA. 2019. Closing the Brief Case: Postinfectious glomerulonephritis as an unexpected sequela of drinking raw milk. *J Clin Microbiol* 57:e01790-18. <https://doi.org/10.1128/JCM.01790-18>.

Editor Carey-Ann D. Burnham, Washington University School of Medicine

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See <https://doi.org/10.1128/JCM.01767-18> in this issue for case presentation and discussion.

Published 28 March 2019

TAKE-HOME POINTS

- Risk factors for campylobacteriosis include ingestion of raw or undercooked poultry, ingestion of unpasteurized dairy products and untreated water, and exposure to dog and cat feces.
- *Campylobacter* spp. are fastidious organisms and typically do not grow under routine aerobic or anaerobic culture conditions.
- *Campylobacter* bacteremia may be missed if only a Gram stain is performed on the positive blood culture broth. For positive blood cultures where no organisms are seen, an acridine orange (AO) stain should be used.
- Many *Campylobacter* spp. will not grow on *Campylobacter* agars. *Campylobacter* selective agars are often selective only for *C. jejuni* and *C. coli*.
- Ciprofloxacin resistance is 25% to 40% for *C. jejuni* and *C. coli*, and multidrug-resistant isolates have been reported.