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Information for Clinicians regarding E. coli serotype 0157:H7

Epidemiology:
The organism is present as bowel flora in up to 10% of cattle. Animals, meat, water, and vegetables can subsequently become contaminated with faecal flora. Food borne outbreaks are well described with undercooked ground beef being the most common source. Ingestion of only a small number of organisms (10-100) is required to cause illness. The average incubation period is 3-4 days, but may range from 1-9 days.

For information on the current North Bay outbreak and on preventative measures, please follow this link: http://www.healthunit.biz/

Clinical:
The clinical hallmark is bloody diarrhea: in one study, 91% of *E. coli* 0157 patients experienced bloody diarrhea at some point during their illness.[1] Other diagnostic clues include a blood leukocyte count of >10, and severe abdominal pain and tenderness. While the absence of fever is more common with *E. coli* 0157 than with other causes of bloody diarrhea[i], the presence of fever does not exclude the diagnosis.

In studies of patients with visibly blood diarrhea, *E. coli* 0157:H7 accounted for 10-39 percent of cases. Other less common bacterial causes of bloody diarrhea included Shigella, Campylobacter and Salmonella.[ii] Parasitic diseases and inflammatory bowel disease should also be considered in the differential diagnosis.

Hemolytic uremic syndrome (acute renal failure, microangiopathic hemolytic anemia, and thrombocytopenia) and thrombocytic thrombocytopenic purpura (hemolytic uremic syndrome in the presence of fever and neurologic symptoms) occur in up to 9% E. coli 0157:H7 infections.[iii] Roughly two thirds of E. coli 0157:H7 related HUS occur in children less than 10; however it can occur in any age group.

Diagnosis:
A clinical diagnosis of *E. coli* 0157:H7 should be considered in patients with typical symptomatology. An epidemiologic link to a known outbreak is also helpful.

Stool samples should be sent for bacterial culture in all patients with bloody diarrhea and the laboratory should be informed that *E. coli* 0157:H7 is suspected. It is suggested you speak with your medical microbiologist for difficult to diagnose cases.

Stool samples should also be sent for ova and parasites in patients with bloody diarrhea where intestinal amebiasis is suspected.

Treatment:
Treatment is supportive and may require hospital admission. Patients should be treated using contact precautions for the duration of their illness to prevent person to person transmission.

Antibiotic therapy and antimotility agents are not recommended in patients with suspected or proven *E. coli* 0157:H7 infection because of a possible increased risk of hemolytic uremic syndrome.[iv]

Empiric antibiotics may be considered in systemically ill patients with bloody diarrhea whose presentation is not typical of *E. coli* 0157:H7. Stool cultures can be helpful in making this differentiation.

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[i] Ann Intern Med 1997 Apr 1;126(7):505-13.
[ii] Clin Infect Dis 2001 Feb 15;32(4):573-80. Epub 2001 Feb 9.
[iii] JAMA 1994 Nov 2;272(17):1349-53
[iv] Lancet 2005 Mar 16;365(9464):1073-86