

New Norovirus Strains Virulent Cause of Diarrhea

BY DOUG BRUNK
San Diego Bureau

LA JOLLA, CALIF. — Infectious disease experts are concerned about the circulation of two new GII.4 norovirus strains that emerged in 2006 in the United States.

Previously referred to as calicivirus, norovirus is transmitted through food, water, environmental surfaces, and person to person, Dr. Larry K. Pickering said at a meeting sponsored by Rady Children's Hospital and the American Academy of Pediatrics.

Outbreaks of the new strains have been reported in close contact facilities such as child care centers, nursing homes, cruise ships, and family settings (MMWR 2007;56:842-6).

Diarrheal disease associated with norovirus "is very severe but it's short lived; it only lasts 24-48 hours but it may seem like 24-48 days for patients," said Dr. Pickering, executive secretary of the Advisory Committee on Immunization Practices at the Centers for Disease Control and Prevention.

"The assays for this specific organism are not widely available, so most laboratories cannot detect norovirus. There is no specific therapy and no vaccine for norovirus. I think we're going to see a lot more activity because the new strains appear to be more virulent," he said.

A study of foodborne outbreaks reported to the CDC between 1998 and 2002 revealed that the etiology could not be determined in 67% of outbreaks. When a pathogen was determined, a bacterial pathogen was identified as the culprit in 55% of outbreaks, followed by viral pathogens (33%), chemical agents such as mushroom toxins and fish toxins (10%), parasites (1%), and multiple etiologies (1%) (MMWR Surveill. Summ. 2006; 55[10]:1-42).

"Some people believe that if all of the outbreaks reported had norovirus testing, the viral causes would be number one," Dr. Pickering said.

Most outbreaks of diarrheal disease in child care centers are due to parasites and viruses. Common pathogens are the spore-forming protozoa *Cryptosporidium parvum* and rotaviruses.

"In child care centers, person-to-person transmission of *Cryptosporidium parvum* and rotavirus is common, due to the low inoculum dose [needed]," he said.

Another common diarrheal illness in children is giardiasis, which is caused by the microscopic parasite *Giardia lamblia* that affects the duodenum and small intestine. The highest incidence is in children aged 1-4 years. "Most of this occurs in June, July, August, and September, and then it starts to fall off a bit," said Dr. Pickering, who is also professor of pediatrics at Emory University, Atlanta.

Antimicrobial therapy options for giardiasis include albendazole, furazolidone, metronidazole, nitazoxanide, paromomycin, quinacrine, and tinidazole. Dr. Pickering said that his drug of choice for children older than 3 years of age is tinidazole because it requires only a single dose.

Furazolidone and nitazoxanide are ideal for younger children, he said, because they come in liquid form.

Diarrheal illness also can be caused by salmonella. The most common strain is the nontyphoidal form, which can cause asymptomatic carriage, gastroenteritis, and systemic illness. A meta-analysis of antimicrobial therapy for uncomplicated nontyphoidal salmonella gastroenteritis found no decrease in length of illness, increased risk for relapse, increased risk for positive

culture after 3 weeks, and increased risk for adverse drug reaction (Cochrane Database Syst. Rev. 2000;93:CD001167).

"However, in infants less than 3 months of age who have salmonella gastroenteritis, most of us would recommend [antimicrobial] therapy because approximately 5% of these infants will develop bacteremia," Dr. Pickering said.

Clostridium difficile also can cause diarrheal illness in children. Transmission occurs mainly in health care settings, and the

hallmark presentations are fever, severe abdominal pain, leukocytosis, and fecal polymorphonuclear leukocytes in the stool.

Oral metronidazole is the drug of choice for children with this type of diarrhea, but vancomycin also can be used. The relapse rate in patients who are treated with either drug is 10%-20%. "Relapse is not due to development of resistance," Dr. Pickering said. "The same drug can be used for the second course." Dr. Pickering had no relevant conflicts to disclose. ■

My patients trust me, so I recommend Essure.



essure®
YOUR FAMILY IS COMPLETE.
YOUR CHOICE IS CLEAR.™

Essure is permanent birth control you both can rely on.

- ~ Still 0 pregnancies in clinical trials
- ~ Over 5 years in market
- ~ 99.8% effectiveness at 4 years
- ~ 170,000 procedures completed
- Simple, efficient procedure done right in your office
- Proper placement is easily identified
- Only saline required
- Only local anesthesia necessary

When a patient tells you her family is complete, talk to her about the Essure procedure.

Learn more at www.essureMD.com or 1-877-ESSURE2

Indications for use: The Essure procedure is used for women who desire permanent birth control (female sterilization) by bilateral occlusion of the Fallopian tubes. **Contraindications:** If a patient is uncertain about her desire to end fertility; pregnant; has terminated or delivered less than 6 weeks before the Essure procedure; has an active or recent upper or lower pelvic infection. **Warnings:** The Essure procedure is not reversible and is not suitable for all women. **Cautions:** Federal law restricts this device to sale by or on the order of a physician; should only be used by physicians who are knowledgeable hysteroscopists and have successfully completed the Essure training program. For a complete description of cautions, warnings, potential adverse events and contraindications see the Essure System Instructions for Use. ©2008 All rights reserved. Conceptus and Essure are registered trademarks and Your Family is Complete Your Choice is Clear is a service mark of Conceptus, Inc. CC-1713 06FEB08