What are vancomycin-resistant enterococci (VRE)?

Enterococci are a group of gram-negative, round-shaped bacteria that commonly live in the gut, although they can cause infection anywhere in the body. They are resistant to several antibiotics, but in the past, physicians could rely on the drug vancomycin to effectively treat enterococcal infections. In recent decades, however, some enterococci have become resistant to vancomycin. The two main species that cause problems are vancomycin-resistant *Enterococcus faecium* and vancomycin-resistant *Enterococcus faecalis*, with *E. faecium* being the most common.

Vancomycin resistance is acquired when a sensitive *Enterococcus* acquires a special piece of DNA called a plasmid. The new strain is called vancomycin-resistant enterococci (VRE). One concern is that VRE appears able to transfer vancomycin resistance to unrelated bacteria such as MRSA (methicillin-resistant *Staphylococcus aureus*). In addition, VRE organisms are usually resistant to more than one antibiotic. VRE can also be spread from person to person and are an increasing problem in hospitals and chronic-care facilities. Approximately 30% of all enterococcal infections are now caused by vancomycin-resistant strains (VRE)

What causes a vancomycin-resistant enterococcal (VRE) infection?

VRE can exist in the body without causing infection, in which case a patient is said to be colonised with VRE. Colonisation usually occurs in the bowel. If the number of VRE bacteria increases, they can invade the bloodstream or spread locally to cause an abdominal abscess or urinary infection. Once in the bloodstream, VRE can cause meningitis, pneumonia, or infection of a heart valve (endocarditis). VRE may also be introduced directly into an open sore or wound, causing a wound infection. The bacteria produce several substances, including proteases that help them break down the normal barriers between the gut tissue and the bloodstream.

Vancomycin-Resistant *Enterococci* Precautions

What precautions should caregivers take when tending to infected persons in their homes?

Outside of healthcare settings, there is little risk of becoming infected with VRE. In the home, the following precautions should be taken:

- ✓ Caregivers should wash their hands with soap and water after physical contact with the infected or colonised person, and before leaving the home.
- ✓ Towels used for drying hands after contact should be used only once.
- ✓ Disposable gloves should be worn if contact with body fluids is expected, and hands should be washed after removing the gloves.
- ✓ Linens should be changed and washed on a routine basis, and if they are soiled.
- ✓ The patient's environment should be cleaned routinely, and when soiled with body fluids.
- ✓ Notify doctors and other healthcare personnel, who provide care for patients, if an individual is colonised or infected with a multidrug-resistant organism

SOURCE:

National Institute of Allergy and Infectious Diseases, National Institutes of Health

Enterococcus:

Bacteria normally found in the feces. Two types, Enterococcus fecalis and Enterococcus fecium, cause human disease, most commonly in the form of urinary tract and wound infections. Other infections, including those of the blood stream (bacteremia), heart valves (endocarditis), and the brain (meningitis) can occur in severely ill patients in hospitals. Enterococci also often colonize open wounds and skin ulcers, and are among the most common antibiotic-resistant bacteria.

Encephalitis and meningitis facts

- Encephalitis is an inflammation of the brain.
- Meningitis is an inflammation of the membranes (called meninges) that surround the brain and spinal cord.
- Anyone experiencing symptoms of encephalitis or meningitis should see a doctor immediately.

What is encephalitis?

Encephalitis is an inflammation of the brain. There are many types of encephalitis, most of which are caused by infections. Most often these infections are caused by viruses. In addition to infections, encephalitis can also be caused by certain diseases that result in an inflammation of the brain.

What causes encephalitis?

Encephalitis is a rare condition that is caused most often by viruses. The leading cause of severe encephalitis is the herpes simplex virus. The very young and the elderly are more likely to have a severe case.

Exposure to viruses can occur through breathing in respiratory droplets from infected people, certain insect bites, and direct skin contact.

What are encephalitis symptoms and signs?

The signs and symptoms of encephalitis can range from very mild symptoms to potentially life threatening. Signs and symptoms of encephalitis include sudden fever, headache, vomiting, visual sensitivity to light, stiff neck and back, confusion, drowsiness, unsteady gait, and irritability. Loss of consciousness, poor responsiveness, seizures, muscle weakness, sudden severe dementia, and memory loss can also be found in patients with encephalitis.

Anyone experiencing symptoms of encephalitis should see a doctor immediately.

What is meningitis?

Meningitis is an inflammation of the membranes (called meninges) that surround the brain and spinal cord.