

## OASIS Alert

### Quality Improvement: Focus On Infections To Improve Pressure Ulcer Outcomes

Do you know when an infection requires an orthopedic consult?

Besides improving survey and clinical outcomes, effectively treating a pressure ulcer infection in time can save your patient's life.

Start using your OASIS assessment to get a jump on pressure ulcer and other wound infections. Then keep checking for skin problems on subsequent visits to catch them early.

**Try this:** Identify patients with conditions or treatments that place them at risk for developing wound infections. These include anemia, steroid use, chemotherapy, low albumin and corresponding low pre-albumin levels and use of non-steroid anti-inflammatory drugs, says **Kathleen Thimsen**, president of **RARE Consulting Group** in Belleville, IL.

#### Learn When To Suspect Infection

Recognize the insidious signs that a pressure ulcer is in trouble due to bacterial load or critical colonization, so you can get the physician and wound-care experts in on the case.

Don't miss: Suspect an infection when you see a "sudden deterioration in the quality or quantity of granulation tissue and persistent high-volume wound drainage," suggests **Dorothy Doughty**, director of the Wound Ostomy Continence Nursing Education Center at **Emory University** in Atlanta.

Tip: Normally the volume of exudate decreases as a wound heals, Doughty notes. And "persistent high volume or increase in drainage usually is bacterial."

Don't be surprised if you don't see reddening of the surrounding skin (erythema), because the infection is on the surface of the wound, Doughty says. But do expect the patient to complain of increased pain in most cases, she adds.

Strategy: Use the PUSH tool (see Eli's OASIS Alert, Vol. 9, No. 1, p. 7) to determine if a pressure ulcer's healing has stalled, indicating potential infection as a cause.

**Treatment:** "The mainstay in preventing and addressing infection is to remove the necrotic tissue" from the wound, says **Sue Gardner**, a nursing professor and wound care specialist at the **University of Iowa** in Iowa City. "Then you can use topical preparations, such as silver, to treat bacterial overload or surface infection in the wound bed," she adds.

There are a number of silver dressings on the market, Doughty notes. The best guideline is to use what's available and pick one based on whether you need absorption or hydration, she says. "If the wound is wet, you need a dressing that will manage the exudate." A dry wound needs a dressing with silver that donates moisture to the wound bed, she adds.

#### Be Aware Of Two Other Potential Infections

Your OASIS assessment may uncover an infection involving the tissue surrounding an ulcer, known as cellulitis.

Red flag: Use the standard clinical signs to identify this infection, advises Doughty. Look for erythema extending more than 2 cm from the wound edge, induration (inflamed, thickened and tender skin), heat and pain, she says.

**Treatment:** This wound infection will require systemic treatment with antibiotics. "You can't treat it topically," Doughty says. Whether the prescriber selects oral or IV antibiotics depends on the ulcer's location and the "patient's level of perfusion," she adds.

If the ulcer with cellulitis is on the trunk or sacrum, the prescriber may give oral antibiotics because those areas have good blood flow, Doughty notes. But if the pressure ulcer is on the lower extremity, the patient may require IV antibiotics to achieve a higher blood level, she adds.

### Osteomyelitis May Be Hidden

You may find an infection spreading beyond the tissue surrounding the ulcer, including into the bone (osteomyelitis).

Look for: One of the two major indicators of infection involving the bone is the ability to probe to the bone, says Doughty. "If you can take a cotton tip applicator and touch bone or if you see or feel bone, osteomyelitis is very likely, and the patient needs an orthopedic consult." The second indicator of infection involving the bone is a large wound that closes down to a nonhealing tunnel, says Doughty. "The patient with such a wound also needs an orthopedic consult."

Treatment: Osteomyelitis is treated with systemic antibiotics, instructs Doughty. "Sometimes the orthopedist will do a surgical resection of the involved bone as well as putting the person on long-term antibiotics."

### Identify the Causative Organism To Get The Right Antibiotic

You need to worry about methicillin resistant *Staphylococcus aureus* (MRSA) because it's a very common pathogen, says Doughty (see related story, p. 15). "If you see invasive infection -- osteomyelitis or cellulitis -- and the wound bed has viable tissue, do a culture" to identify whether MRSA is present or not -- and determine the organism's sensitivity to various antibiotics, advises Doughty.

**Exception:** "Most topical agents are effective against MRSA -- for example, silver," says Doughty. So if you are treating a surface infection with silver, a culture is not usually required because silver has "extremely broad spectrum" antibacterial effects, she says.

A punch biopsy is the ideal approach to figuring out the causative organism of a wound infection, says **James Marx**, an infection control expert and principal of **Broad Street Solutions** in San Diego. Yet it's hard to do punch biopsies in home care because they require a physician to do them and a lab to process the biopsy.

**A reasonable alternative:** Clinicians can identify wound infection based on the wound's clinical presentation and then do a good swab culture to diagnose the causative microorganism and determine its susceptibility to antibiotics, says Doughty.

**Use the right technique:** To obtain a swab culture, first flush the ulcer with saline to remove purulent drainage, advises Doughty. Then select "a square centimeter of viable tissue and swab forcibly to produce exudate," she says. "The rule of thumb is you don't culture pus, slough or eschar," Doughty adds.