

Careful cleaning of children's skin wounds key to healing, regardless of antibiotic choice

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When it comes to curing skin infected with the antibiotic-resistant bacterium MRSA (methicillin-resistant *Staphylococcus aureus*), timely and proper wound cleaning and draining may be more important than the choice of antibiotic, according to a new Johns Hopkins Children's Center study. The work is published in the March issue of *Pediatrics*.

Researchers originally set out to compare the efficacy of two antibiotics commonly used to treat staph skin infections, randomly giving 191 children either cephalexin, a classic anti-staph antibiotic known to work against the most common strains of the bacterium but not MRSA, or clindamycin, known to work better against the [resistant strains](#). Much to the researchers' surprise, they said, drug choice didn't matter: 95 percent of the children in the study recovered completely within a week, regardless of which antibiotic they got.

The finding led the research team to conclude that proper wound care, not antibiotics, may have been the key to healing.

"The good news is that no matter which antibiotic we gave, nearly all skin infections cleared up fully within a week," says study lead investigator Aaron Chen, M.D., an [emergency physician](#) at Hopkins Children's. "The better news might be that good low-tech wound care, cleaning, draining and keeping the infected area clean, is what truly makes the difference between rapid healing and persistent infection."

Chen says that proper wound care has always been the cornerstone of [skin infection](#) treatment but, the researchers say, in recent years more physicians have started prescribing antibiotics preemptively.

Although the Johns Hopkins investigators stop

short of advocating against prescribing antibiotics for uncomplicated MRSA skin infections, they call for studies that directly measure the benefit - if any - of drug therapy versus proper wound care. The best study, they say, would compare patients receiving placebo with those on antibiotics, along with proper wound cleaning, draining and dressing.

Antibiotics can have serious side effects, fuel drug resistance and raise the cost of care significantly, the researchers say.

"Many physicians understandably assume that antibiotics are always necessary for bacterial infections, but there is evidence to suggest this may not be the case," says senior investigator George Siberry, M.D., M.P.H., a Hopkins Children's pediatrician and medical officer at the Eunice Kennedy Shriver Institute of Child Health & Human Development. "We need studies that precisely measure the benefit of antibiotics to help us determine which cases warrant them and which ones would fare well without them."

The 191 children in the study, ages 6 months to 18 years, were treated for skin infections at Hopkins Children's from 2006 to 2009. Of these, 133 were infected with community-acquired MRSA, and the remainder had simple staph infections with non-resistant strains of the bacterium. Community-acquired (CA-MRSA) is a virulent subset of the bacterium that's not susceptible to most commonly used antibiotics. Most CA-MRSA causes skin and soft-tissue infections, but in those who are sick or have weakened immune systems, it can lead to invasive, sometimes fatal, infections.

At 48-hour to 72-hour follow-ups, children treated with both [antibiotics](#) showed similar rates of improvement - 94 percent in the cephalexin group improved and 97 percent in the clindamycin group

improved. By one week, the infections were gone in 97 percent of patients receiving cephalexin and in 94 percent of those on clindamycin. Those younger than 1 year of age and those whose infections were accompanied by fever were more prone to complications and more likely to be hospitalized.

Provided by Johns Hopkins Medical Institutions

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