

Averting postsurgical infections in kids: Give antibiotics within hour before first incision

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Giving children preventive antibiotics within one hour before they undergo spinal surgery greatly reduces the risk for serious infections after the surgery, suggests a Johns Hopkins study to be published in the August issue of *Pediatric Infectious Disease Journal* (also available online ahead of print). Children who received antibiotics outside of the golden one-hour window were three and half times more likely to develop serious infections at the surgery site, researchers report, pointing out that something as simple as ensuring that a child gets timely prophylaxis can prevent serious complications and reduce the length of hospital stay.

"When it comes to preventing infections, when a child gets antibiotics appears to be one of the most critical yet most easily modifiable risk factors, and may matter just as much as the type and dosage of the medication," says lead researcher Aaron Milstone, M.D., infectious disease specialist at the Johns Hopkins Children's Center. "The moral of this is that an ounce of timely prevention is indeed worth a pound of treatment."

Nearly 780,000 postsurgical infections occur in the United States each year, according to estimates from the Institute for Healthcare Improvement. An infection after surgery nearly doubles a patient's risk of death, doubles a patient's hospital stay and adds up to \$50,000 to treatment costs per patient, researchers say.

While preoperative antibiotic prophylaxis is standard in adults, there are no standard guidelines on how to administer antibiotics in children

undergoing surgery.

Reviewing nearly 1,000 spinal fusion surgeries performed in children over a six-year period at Hopkins, investigators found 36 deep surgical site infections. More serious than superficial skin infections, these can cause serious complications and require aggressive treatment including additional surgeries and long-term antibiotics. Of the 36 cases, 28 percent received medication outside the one-hour window, either more than an hour before incision or after the surgery began. Other factors affecting infection risk included underlying medical conditions and previous spinal surgeries, researchers found.

Even though spinal fusion surgeries are complex procedures and thus carry higher risk for deep-site infections, the findings are likely relevant to many types of surgical procedures, the researchers say, because timing is always critical when administering antibiotics, either as treatment or prevention.

Source: Johns Hopkins Medical Institutions

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