

Nearly one in four babies in NICUs receive acid suppressing medication

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Since 2006, several published studies have associated the use of some acid suppression medications in hospitalized high-risk babies with infections, necrotizing enterocolitis and increased risk of death. Those medications - histamine-2 receptor antagonists such as ranitidine (Zantac and others), and proton pump inhibitors such as esomeprazole (Nexium and others) - were originally approved by the U.S. Food and Drug Administration for use in adults and older children.

Though not approved for use in newborns, doctors prescribe the drugs to treat [gastroesophageal reflux disease](#) (GERD) and to help with other conditions diagnosed in [neonatal intensive care](#) units (NICUs). A study out online today in *The Journal of Pediatrics*, led by physicians and researchers at Nationwide Children's Hospital shows just how frequently the drugs have been prescribed for those [newborns](#) at 43 children's hospitals across the country.

From January 2006 through March 2013, 28,989 of 122,002 of babies, or 23.8%, received a histamine-2 receptor antagonist or proton pump inhibitor. Babies diagnosed with GERD, congenital heart disease and ear, nose and throat conditions were the most likely to be prescribed the medications.

"The number is surprising, because there are now multiple studies that say these drugs are associated with harmful effects," said Jonathan L. Slaughter, MD, MPH, lead author of the study and neonatologist at Nationwide Children's. "There's actually little evidence that acid

suppression helps in the NICU at all."

Some amount of stomach acid likely protects these babies, who have compromised immune systems, from harmful bacteria, according to Dr. Slaughter, who is also a principal investigator in the Center for Perinatal Research in The Research Institute at Nationwide Children's and an assistant professor of Pediatrics at The Ohio State University College of Medicine.

"GERD itself is over-diagnosed without complete testing," Dr. Slaughter said. "When reflux is present, reduction of acid alone does not prevent the reflux. Many symptoms commonly associated with GERD in preterm infants, such as breathing problems, are often simply due to immaturity."

The study authors found that the percentage of babies treated with histamine-2 receptor antagonists declined from 2006 to 2013, and while the percentage of babies treated with [proton pump inhibitors](#) rose until 2010, it declined afterward.

"It's encouraging that doctors are starting to pay attention to the warnings and decrease usage," Dr. Slaughter said. "In the small premature babies who are prescribed acid suppressive medications, doctors are waiting longer, until they are a little older. That's promising. But I think the numbers should be declining faster, and the research community should continue to devote resources to study the drugs' effectiveness and safety."

Most babies who are treated with the suppressive medications in the NICU continue to take them at discharge from the hospital, the study found. Doctors should consider a plan to wean the babies before they leave, Dr. Slaughter said. Among other reasons, parents want to know that their children can eventually stop the medicine.

"Parents are right to ask questions and voice concerns about starting the drugs, or about the timetable for stopping," Dr. Slaughter said. "Parents should not be afraid to ask about evidence for the medications working or about possible side effects."

Neonatologists at Nationwide Children's use acid suppressive medications in limited circumstances only after confirmation of GERD following testing, and work with the hospital's associated NICUs to ensure that only [babies](#) who can be helped by them receive them, according to Dr. Slaughter.

More information: Slaughter J, Stenger M, Reagan P, Jadcherla S. Neonatal histamine-2 receptor antagonist and proton pump inhibitor treatment at United States Children's Hospitals. *The Journal of Pediatrics*. 2016 April 27. [Epub ahead of print]

Provided by Nationwide Children's Hospital

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