

Antibiotic may prove beneficial to preterm infant lung health

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A study performed by University of Kentucky researchers shows promise for the use of azithromycin in treating *Ureaplasma*-colonized or infected premature infants to prevent bronchopulmonary dysplasia (BPD).

The study, published in *Pediatric Pulmonology*, showed subjects colonized or infected with the *Ureaplasma* bacteria developed BPD or died 73 percent of the time in the azithromycin-treated group, compared to 94 percent of the time in the placebo group.

Bronchopulmonary dysplasia is a chronic lung disorder characterized by inflammation and scarring in the lungs. It is common among [premature infants](#), whose lungs are not fully developed before birth.

This disorder can lead to chronic [lung damage](#) or death. Many infants who survive are at a greater risk for having recurrent respiratory infections, such as pneumonia or bronchiolitis.

The presence of the *Ureaplasma* bacterium is a risk factor in developing BPD. This bacterium causes inflammation in the lungs and can also lead to meningitis, pneumonia or septicemia. It is passed on from mother to child. An estimated 80 percent of women are already colonized with it, and nearly 45 percent of extremely preterm infants are affected by it.

"Current preventative therapies for bronchopulmonary dysplasia are limited," said Dr. Hubert O. Ballard, the UK neonatologist leading the

study. "Because the inflammation from a Ureaplasma infection often leads to BPD, and because this [bacterium](#) is so easily spread to infants from the mother, we sought to find out if the anti-inflammatory benefits of [azithromycin](#) could help prevent the disorder from developing."

The study was performed on a group of 220 infants admitted to the UK Neonatal [Intensive Care Unit](#) from September 2004 to August 2008. Enrollment criteria included a birth weight of less than 1,250 grams, the use of intermittent mechanical ventilation for fewer than 12 hours, and an age of under 72 hours.

Upon enrollment, each infant was randomized to receive azithromycin or a placebo for a total of six weeks. Infants testing positive for Ureaplasma were placed in a separate subgroup of the study.

Ballard, et al, previously published a pilot study that demonstrated a possible benefit of azithromycin prophylaxis in infants weighing less than 1,000 grams, but the original study excluded patients who tested positive for the Ureaplasma bacteria.

Neither the previous study nor the current study demonstrated a statistically significant benefit to using azithromycin therapy to prevent BPD in preterm infants who were not colonized or infected with Ureaplasma.

Though the results of the study show potential for preventing bronchopulmonary [dysplasia](#) in Ureaplasma-colonized or infected patients, Dr. Ballard stressed that a larger multi-centered trial is needed to properly assess the benefits of azithromycin for these subjects.

"Our research demonstrates the benefit of treating preterm infants with azithromycin who are colonized or infected with Ureaplasma. To date, this is the largest single-center study to evaluate azithromycin use in

[preterm infants](#)," Ballard said. "However, further studies are required to evaluate azithromycin therapy for the routine treatment of Ureaplasma colonization/infection in the preterm population."

Provided by University of Kentucky

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