

Letters

COMMENT & RESPONSE

Notice of Duplicate Publication: Heated, Humidified High-Flow Nasal Cannula vs Nasal Continuous Positive Airway Pressure for Respiratory Distress Syndrome of Prematurity: A Randomized Clinical Noninferiority Trial (*JAMA Pediatr.* doi:10.1001/jamapediatrics.2016.1243)

We write to report that our publication in *JAMA Pediatrics* (*JAMA Pediatr.* Published online August 8, 2016. doi:10.1001/jamapediatrics.2016.1243)¹ included 177 study participants (among 316 reported in the *JAMA Pediatrics* article¹) from an earlier study by our group that was published in *Pediatria Medica e Chirurgica* (*Pediatr Med Chir.* 2014;36[4]:88. doi:10.4081/pmc.2014.88).² However, that study² was not powered to assess the primary outcome that we reported in *JAMA Pediatrics*. The primary outcome that is appropriately powered in our article in *JAMA Pediatrics* is the need for mechanical ventilation within 72 hours from the beginning of the noninvasive respiratory support. We regret that we did not report the partial duplication of study participants in the *JAMA Pediatrics* article¹ and that we did not cite the previously published article. We apologize to the readers and editors of *JAMA Pediatrics* for any confusion this has caused.

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1. Lavizzari A, Colnaghi M, Ciuffini F, et al. Heated, humidified high-flow nasal cannula vs nasal continuous positive airway pressure for respiratory distress syndrome of prematurity: a randomized clinical noninferiority trial [published online August 8, 2016]. *JAMA Pediatr.* doi:10.1001/jamapediatrics.2016.1243
2. Ciuffini F, Pietrasanta C, Lavizzari A, et al. Comparison between two different modes of non-invasive ventilatory support in preterm newborn infants with respiratory distress syndrome mild to moderate: preliminary data. *Pediatr Med Chir.* 2014;36(4):88.

Modeling the Effects of Priming With the Whole-Cell Bordetella Pertussis Vaccine

To the Editor The modeling study of DeAngelis et al¹ suggested that substitution of 1 dose of whole-cell pertussis vaccine for the first dose of acellular vaccine at age 6 to 8 weeks would result in at least a 91% reduction in the incidence of pertussis. As noted in the accompanying editorial, the validity of these findings relies on both explicit and implicit assumptions within the model structure and its parameters. We go further to say that such a profound effect on pertussis disease and transmission seems inherently unlikely and that implementation barriers are understated.

The assumption driving the model is that acellular pertussis vaccine protects against disease but has no effect on infection and therefore transmission, whereas a single dose of whole-cell vaccine has a strong effect on both disease and infection. Although Warfel et al² showed that whole-cell vaccinated but not acellular vaccinated baboons are protected against asymptomatic infection, this was not in the context of a single whole-cell vaccine dose. Secondary attack rates arising from pertussis cases among predominantly whole-cell vaccinated children were reported from Senegal in the early 1990s.³ Infectiousness was significantly reduced (−83%; 95% CI, 50% to 93%) in children with clinical pertussis who had received 3 vaccine doses but not among 1-dose vaccinated children (−47%; 95% CI, −128% to 23%). A further consideration is marked variability in the effectiveness of whole-cell vaccines,⁴ limiting generalizability of conclusions.

Pertussis vaccine boosting in pregnancy, now a standard recommendation in many settings, has much greater potential for clinically significant blunting of antibody responses in whole-cell vaccinated infants, among whom immune blunting from maternal antipertussis antibodies at comparatively low levels has been demonstrated. On the other hand, contrary to fears about reactogenicity of whole-cell vaccines, studies in the 1990s found this was modest after dose 1 and in accelerated schedules.⁵

In summary, we caution that the range of values for relative effectiveness of acellular and whole-cell vaccines on infectiousness in the DeAngelis et al study¹ are implausible and the model findings insufficient for serious policy consideration. Reintroduction of a whole-cell vaccine as the first dose in the infant schedule is a significant implementation challenge with highly uncertain benefits. Comparative immunogenicity and reactogenicity in prospective trials in humans in the context of maternal immunization as standard of care are needed.

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