Intensive Care Med (2015) 41:375
DOI 10.1007/s00134-014-3549-4

Jocelyn Grunwell

Comments on Baranwal et al: Dexamethasone pretreatment for 24 h versus 6 h for prevention of postextubation airway obstruction in children

Accepted: 5 November 2014
Published online: 15 November 2014

Dear Editor,

I read with interest the paper of Baranwal et al. [1] on the use of a 24-h versus a 6-h pre-extubation (pretreatment) protocol of dexamethasone (24hPD vs. 6hPD) to prevent postextubation airway obstruction (PEAO) in children in a resource-limited pediatric intensive care unit. The primary outcome of the study was the occurrence of clinically significant PEAO, as defined by a composite indicator comprised of a modified version of Westley's croup score (mWCS) of ≥ 4, which required adrenaline nebulization treatment(s) and/or reintubation during the 48-h post-extubation period.

As I was evaluating the paper, I noticed that the relative risk (RR) for the primary outcome was incorrectly calculated. Based on the information provided in the paper, the 2 × 2 table is:

	24hPD	6hPD	Total
+PEAO	43	48	91
−PEAO	23	10	33
Total	66	58	124
Event rate (%)	65	83	

The RR for PEAO should be calculated as 0.79 [95 % confidence interval (CI) 0.63–0.97]:

$$\frac{\text{Probability of + PEAO in 24hPD}}{\text{Probability of + PEAO in 6hPD}} = \frac{(43/66)}{(48/58)} = 0.79.$$

However, the RR is reported in the paper as 2.02 (95 % CI 1.05–3.88), and it appears as if the authors calculated the RR as:

$$\frac{\text{Probability of − PEAO in 24hPD}}{\text{Probability of − PEAO in 6hPD}} = \frac{(23/66)}{(10/58)} = 2.02.$$

A similar error was made in calculating the RR for reintubation alone. The RR for reintubation should be calculated as 0.53 (95 % CI 0.19–1.49):

$$\frac{\text{Probability of + reintubated in 24hPD}}{\text{Probability of + reintubated in 6hPD}} = \frac{(5/61)}{(9/58)} = 0.53.$$

In contrast, the RR for reintubation in the paper is reported as 1.09 (95 % CI 0.96–1.25), and it appears as if the authors calculated the RR for reintubation as:

$$\frac{\text{Probability of − reintubation in 24hPD}}{\text{Probability of − reintubation in 6hPD}} = \frac{(56/61)}{(49/58)} = 1.09.$$

Finally, the RR for the secondary outcome, i.e., measuring the number of patients requiring epinephrine nebulization treatments, should be calculated as 0.76 (95 % CI 0.61–0.95):

$$\frac{\text{Probability of + adrenaline NEB in 24hPD}}{\text{Probability of + adrenaline NEB in 6hPD}} = \frac{(39/61)}{(41/49)} = 0.76.$$

The authors calculated the RR as 2.21 (95 % CI 1.2–7.3), and it appears that the RR for the secondary outcome was calculated as:

$$\frac{\text{Probability of − adrenaline NEB in 24hPD}}{\text{Probability of − adrenaline NEB in 6hPD}} = \frac{(22/61)}{(8/49)} = 2.21.$$

In addition, I noticed that in the RR calculation for the reintubation rate there seems to be five children missing from the 24hPD analysis group, making the total *n* reported 119 patients rather than the 124 patients included in the per protocol analysis in the study. There is no explanation as to why these five children in the treatment group are missing from the analysis.

Conflicts of interest None.

Reference

1. Baranwal AK, Meena JP, Singhi SC, Muralidharan J (2014) Dexamethasone pretreatment for 24 h versus 6 h for prevention of postextubation airway obstruction in children: a randomized double-blind trial. Intensive Care Med 40:1285–1294. doi: 10.1007/s00134-014-3358-9

J. Grunwell (✉)
Children's Healthcare of Atlanta at Egleston–Emory University School of Medicine, Atlanta, GA, USA
e-mail: jgrunwe@emory.edu