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Title: Prolonged apnea, desaturations and bradycardia in infants with bronchopulmonary dysplasia

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Body: Objective. Apnea is a common breathing pattern in premature infants especially those with bronchopulmonary dysplasia (BPD). Our aim was to describe occurrence of apnea, desaturations and bradycardia in infants with BPD. Methods. We performed respiratory study in 25 premature infants with BPD and 25 non-BPD prematures (gestational age 26-30 weeks). Infants were examined 1–3 times at ages of less than 29 days, 29-50 days, more than 50 days. Proportion of apnea of ≥ 20 s duration or events accompanied by oxygen saturation (SatO_2) falls $\leq 80\%$, bradycardia ≤ 80 beats per minute in all apnea of ≥ 10 s duration was analyzed. Results. During the first 28 days infants with mild BPD had less prolonged apnea than non-BPD infants (49% vs. 59%, $P=0.08$) and more events with $\text{SatO}_2 \leq 80\%$ (43% vs. 27%, $P<0.05$). During the 2nd age interval there was no difference between these groups. Infants with moderate to severe BPD had more apnea with $\text{SatO}_2 \leq 80\%$ compared to infants with mild BPD and without BPD at the 2nd (59%, 41% and 41%, resp.) and 3rd (50%, 18%, 0) age intervals. Bradycardia ≤ 80 beats per minute accompanied more apnea in infants with BPD, mostly in mild disease (9% in the 1st, 11% in the 2^d, 15% in the 3rd age interval), than in patients without BPD (7%, 1%, 0, resp.). Main neurologic abnormalities appeared not to differ among groups. Conclusion. Infants with moderate to severe BPD are characterized by deep SatO_2 falls during apnea until the age of more than 50 days. Infants with mild illness have similar proportion of prolonged apnea and apnea with $\text{SatO}_2 \leq 80\%$ as prematures without BPD, when elder than 28 days. Apnea in BPD infants are often accompanied by significant bradycardia.