

Perfusion Index Variability in Preterm Infants Treated with Two Different Natural Surfactants for Respiratory Distress Syndrome

Karadag N., Dilli D., Zenciroglu A., Aydin B., Beken S., Okumus N. *Am J Perinatol.* 2014 Feb 24.

Objective

The objective of this study was to compare the perfusion index (PI) variability in premature infants with respiratory distress syndrome (RDS) following administration of two different natural surfactant preparations.

Study Design

This was a prospective study on 92 preterm infants with RDS. Patients were randomized into two groups. Group 1 (n = 46) received beractant; Group 2 (n = 46) received poractant alfa. Oxygen saturation, PI, and heart rate were measured by Masimo Rainbow SET Radical-7 pulse oximeter (Masimo Corp., Irvine, CA) before and after surfactant. The effects of the two treatment regimens on PI and oxygenation were compared.

Results

Repeated doses were more needed in beractant group ($p = 0.04$). Median oxygenation index (OI) before surfactant were similar, but improvement in OI was more prominent at 6th hour of surfactant in Group 2 ($p = 0.001$). Both groups had similar preductal PI values before surfactant. PI was higher at 6th hour of surfactant in Group 2 ($p = 0.001$). Pulmonary hemorrhage, intraventricular hemorrhage, patent ductus arteriosus, necrotizing enterocolitis, and mortality were more frequent in infants whose PI values lower than 0.7 within the first 5 days of life ($p = 0.001$).

Conclusion

Poractant alfa resulted in more prominent improvement in PI and OI. Low PI values measured at early postnatal period may predict poor clinical outcome in preterm infants with RDS.