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SHOULD BE OXYGENATION OF EXTREMELY PREMATURE INFANTS (EPI) GUIDED BY FIO_2 ADJUSTMENT DURING THE FIRST FIVE MINUTES OF LIFE?

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Background: The adequate management of FiO_2 adjustment depends on the feedback evaluation of heart rate (HR) and saturation of oxygen (SO_2) values.

Objective: To evaluate HR and SO_2 responses in 15s and 30s delays following FiO_2 changes.

Methods: Thirty one of EPI £ 28 weeks were resuscitated and stabilized in a special bed equipped with two cameras enabling the evaluation of all interventions, monitoring HR and SO_2 values and the actual FiO_2, PIP and PEEP levels provided by a T piece device. The TRAL sequence analysis software makes it possible to concurrently evaluate different images recorded at the same time. FiO_2 was started at 0.30 and further adjusted according to the guided SO_2. The multiple linear regression tested the relationship between FiO_2 as an independent variable and dependent variables such as SO_2 and HR in real time, with a 15s and 30s delay, and in the opposite dependence. The Massimo pulse oximeter set up at a 2 sec interval was used. The Spearman Rank Correlation evaluated the probability of all relations.

Results: Although a significant negative correlation between FiO_2 levels and HR and SO_2 values was confirmed (R= - .302, t= .000; R= -.359, t= .001), no significant correlations were found comparing FiO_2 changes and those of HR and SO_2 following 15s and 30s intervals (R= -.031, t= .541; R=-.018, t= .726).

Conclusion: FiO_2 adjustment does not dominate oxygenation of EPI during the first 5 minutes of life. Establishing an adequate functional residual capacity may be the preferable skill.