

The Good, the Bad, the Marginal: respiratory management of <29 weeks infants according to subjective assessment of perinatal adaptation

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Introduction:

Even if a primary CPAP strategy gives benefits in extremely preterm infants, many still require intubation at birth. Half of those initially managed with primary CPAP will require further support: surfactant administration or mechanical ventilation. Those infants have increased risks of death and neonatal morbidities, and will require longer duration of respiratory support. Identifying them early, during the birth stabilization process, might lead to improvements in respiratory care.

A subjective classification of perinatal adaptation as Good, Bad or Marginal has been suggested but requires further evaluation. We aimed to evaluate respiratory management according to perinatal adaptation.

Methods:

Premature infants of less than 29 weeks and admitted between 01/2013 and 07/2014 were retrospectively studied. Neonatal database and discharge summaries provided neonatal care and outcome data. We categorized infants as having good, bad or marginal perinatal adaptation (GPA, BPA and MPD). Data are presented as mean +/- SD, median (interquartile range) or incidence and analyzed with ANOVA, Kuskal-Wallis test or Chi2.

- Cries at birth
- Vigorous breathing
- Good HR
- Low FiO₂

The Good



- Apneic
- Atonic
- Bradycardic
- High FiO₂

The Bad



- Intermittent breathing
- HR > with ventilation
- FiO₂ ↑ then ↓

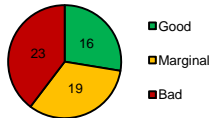
The Ugly Marginal



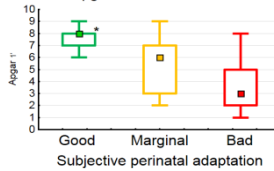
Results (1):

Condition at birth

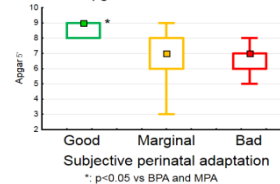
58 patients are included, with mean GA of 26 4/7 wk (24-28) and BW of 885 ±187g.



Apgar score at 1 min



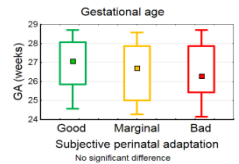
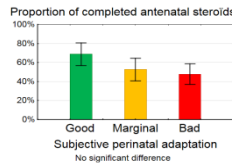
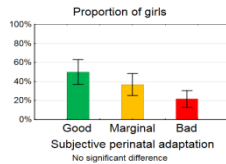
Apgar score at 5 min



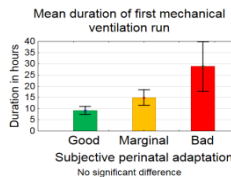
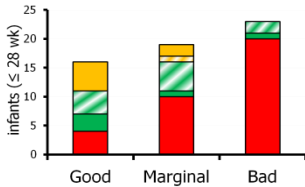
Results (2):

Predictive factors

Non significant risk factors for bad adaptation are male gender, lack of complete antenatal steroid exposure and lower GA.



Results (3): Primary CPAP success

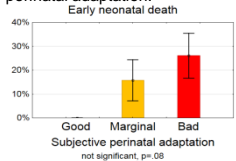


■ DR intubation ■ Subjective perinatal adaptation
■ Primary CPAP success
■ Initial CPAP, intubated before H72
■ LISA

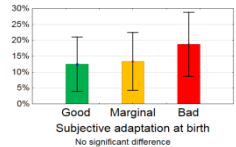
Risk of intubation in the delivery room is associated with poorer adaptation (p<0,01). Primary CPAP success was not different according to groups. However, more infants with MPA received surfactant while on CPAP (LISA method) This surfactant was given in the delivery room in 1, 4 and 2 infants respectively. For infants ventilated within day 3, the duration of the first episode of mechanical ventilation was (NS) shorter with better perinatal adaptation.

Results (4): Death or BPD

Early neonatal death tend to decrease with better perinatal adaptation.



There is no difference in BPD at 36 weeks.



Conclusions:

Infants with better perinatal adaptation have increased chances of being initially managed with CPAP.

Primary CPAP success may be improved with less invasive surfactant therapy.

Outside of the delivery room, subjective assessment of perinatal adaptation tends to identify risk of early neonatal death, but is not predictive of respiratory outcomes.