

Electrocardiogram Provides a Continuous Heart Rate Faster Than Oximetry During Neonatal Resuscitation.

Katheria A., Rich W., Finer N. *Pediatrics*. 2012 Nov;130(5):e1177-81.

Objective

To compare the time required to obtain a continuous audible heart rate signal from an electrocardiogram (ECG) monitor and pulse oximeter (PO) in infants requiring resuscitation.

Methods

Infants who had both ECG and PO placed during resuscitation were analyzed using video and analog recordings. The median times from arrival until the ECG electrodes and PO sensor were placed, and the time to achieve audible tones from the devices, were compared.

Results

Forty-six infants had ECG and PO data. Thirty infants were very low birth weight (23-30 weeks). There was a difference in the median total time to place either device (26 vs 38 seconds; $P = .04$), and a difference ($P < .001$) in the time to achieve an audible heart rate signal after ECG lead (2 seconds) versus PO probe (24 seconds) placement. In infants weighing >1500 g ($n = 16$), the median time (interquartile range) to place the ECG was 20 seconds (14-43) whereas the time to place the PO was 36 seconds (28-56) ($P = .74$). The median times (interquartile range) to acquire a signal from the ECG and PO were 4 seconds (1-6) and 32 seconds (15-40, $P = .001$), respectively. During the first minutes of resuscitation, 93% of infants had an ECG heart rate compared with only 56% for PO.

Conclusions

Early application of ECG electrodes during infant resuscitation can provide the resuscitation team with a continuous audible heart rate, and its use may improve the timeliness of appropriate critical interventions.