Assessing High-Risk Infants in the Delivery Room with Pulse Oximetry.
Kopotic R.J., Lindner W. *Anesth Analg.* 2002 Jan;94(1 Suppl):S31-6.

Introduction

Heart rate and oxygenation status are essential to the delivery room assessment of newborn infants. Pulse oximetry (PO) can capture these two variables but low peripheral perfusion, patient motion and the presence of ambient lighting can challenge the technology. New generation pulse oximeters claim to measure through these conditions. The objective of this study was to assess the performance of new generation pulse oximeters during the delivery room assessment and management of high-risk newborns.

Methods and Results

Part one (study A) compared the outcome of 25 infants simultaneously monitored with two new PO technologies (experimental group) to a matched population of 25 infants without PO-monitoring (control group). Findings from the experimental group revealed a significant difference between new PO technologies and an improvement in patient outcome compared to the control group.

Part two (study B) evaluated the effects of PO-monitoring on 15 very immature infants. Use of Masimo SET PO was associated with a rapid acquisition and near continuous display of PO values, which proved valuable for initial respiratory care and to determine the need for more intensive procedures.

Both studies revealed that near immediate postnatal PO monitoring of newborns in the delivery room was feasible and valuable.