AB025. Controlled FiO_2 therapy to neonates by oxygen hood in the absence of oxygen analyser

Sunil Kumar Jatana, S. Dhingra, Mng Nair

Melaka Manipal Medical College, Melaka, Malaysia

Background: A study was conducted to evaluate and to evolve a system of standardizing the oxygen concentration inside the oxygen hood and to develop guidelines for controlled FiO_2 administration by changing size of the hood, lid position on the hood and the oxygen flow rate, without an oxygen analyzer. The effect of low flow rates on carbon dioxide (CO_2) retention inside the head box was also studied.

Methods: A dummy patient and thirty neonates, requiring oxygen to be delivered through head box, constituted the material for the study group. Oxygen content in the head box was measured using a standard oxygen analyzer while the size of head box; flow rate and lid position were changed independently and in combination. The head boxes were tested on a dummy patient. These results were analyzed, and a general guideline derived was applied to thirty neonates requiring oxygen therapy using head box. Multiple readings were taken. Data thus collected was tabulated, statistically analyzed, and appropriate conclusions drawn.

Results: Volume of headbox had an inverse relation with the oxygen concentration inside the headbox. A smaller sized headbox achieved better & more predictable oxygen concentration at all flow rates. Maximum difference in oxygen concentration by varying the lid position was observed in the large headbox. Keeping the variables constant, oxygen concentration was lower in babies as compared to dummy, which is statistically significant. No significant CO_2 retention was found at flow rate of 4 L/pm in a small & 3 L/pm in a medium & large head box respectively.

Conclusions: It is possible to predict the oxygen concentration inside the head box depending upon various variables without the use of oxygen analyzer. Larger the size of the head box and higher the lid position, lesser the oxygen concentration achieved at a given oxygen flow rate. Oxygen concentration achieved in babies is lesser than the concentration achieved in a dummy. Flow rates of less than 4 L/pm in small & 3 L/pm in medium & large sized head boxes are associated with CO_2 retention.

Keywords: XXXXXXX

doi: 10.21037/pm.2018.AB025

Cite this abstract as: Jatana SK, Dhingra S, Nair M. Controlled FiO_2 therapy to neonates by oxygen hood in the absence of oxygen analyser. Pediatr Med 2018;1:AB025.