HIGH FLOW OXYGEN THERAPY IN GENERAL PAEDIATRIC WARDS

AIM

• To develop an evidence-based protocol for the use of high flow oxygen therapy (HFOT) in paediatric wards at district hospitals in the Kwa-Zulu Natal (KZN) province
• To guide medical staff on safe application of HFOT

BACKGROUND

• In KZN, pneumonia remains the second cause of deaths in children <5 years outside the neonatal age
• Respiratory support modalities at district hospitals are limited
• HFOT potentially reduces the rate of intubations 2,3
• HFOT has been used in remote areas without intensive care unit support, it is safe with fewer complications 1,3

BENEFITS OF HFOT

• Provides warm humidified air which thins secretions thereby increasing patient comfort 3
• Improves partial pressure of oxygen and carbon dioxide resulting in reduce work of breathing 3
• Generates positive airway pressure, resulting in end expiratory pressure effect thereby increasing functional residual capacity 3
• Washout of upper-airways reduces dead space 3
• Decreases entrainment of room air = increased inspired fraction of inspired oxygen

LIMITATIONS OF HFOT

• Variable pressures generated are not quantifiable
• Flows of 2L/kg/min can result in very high flow rates for younger children3
• HFOT may mask early signs of deterioration1,3

METHODOLOGY

97 articles (EBSCO/WOS/PubMed/Other) → 6 Articles excl.
91 Abstracts reviewed → 38 Articles excl.
53 Articles reviewed → 44 Articles excl. • 20 Duplicate info. • 16 Setting • 5 Inaccessible • 3 Population
9 Articles included in review

SUMMARY

• There is little evidence on the use of HFOT outside the intensive care unit setting
• The patient’s response to HFOT during the first hour will determine outcome1
• True predictors of failure of HFOT are not known
• HFOT should not delay intubation if decompensation is suspected 1
• To date, there is no trial on whether to start with HFOT or to use when other respiratory care modalities fail

PROTOCOL SUMMARY

Medical review: Initiate HFOT at 2L/kg/min
NO

Record RR, HR, SaO2 every 30min during the 1st hour

Medical review: Improvement noted YES/NO

Discuss with Senior Chest-Xray / ABG / IV fluids / escalate Rx

NO

Medical review: Improvement noted

YES

Continue current monitoring and feeds
Initiate weaning

DETERIORATION! Consult and consider referral

YES

Medical review: Improvement noted

NO

DETERIORATION!

Keywords: HFOT, children, pediatric ward

REFERENCES


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