

SAFETY AND EFFICACY OF THE VapoTherm™ 2000i IN THE NEONATAL POPULATION



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Purpose

To determine the safety and efficacy of the VapoTherm™ 2000i high flow nasal cannula in the neonatal population.

Method

Data was collected on neonates while being treated with the VapoTherm system. Neonates with respiratory compromise, apnea of prematurity, and premature lungs were treated using supplemental oxygen and high humidity by water vapor. VapoTherm was used either as a primary treatment for mild to moderate cases of respiratory distress syndrome in lieu of traditional nasal CPAP or as a post mechanical ventilation (post-extubation) treatment in place of nasal CPAP.

Results

We treated and recorded data on 109 neonates during 2002 and 2003. Total days of treatment are 2070 days or 5.7 years of therapy time equivalents.

Patient weights are:

Weight grams	Number of Neonates
< 500	3
501 - 750	32
751 - 1000	27
1001 - 1250	20
1251 - 1500	10
> 1500	17
Total	109

Results (cont'd)

Average individual patient time on VapoTherm in 2002 is 30 days \pm 13 and 2003 is 18 \pm 15 days. During treatment there were no evidence of barotrauma, CPAP belly, or nosocomial infection. There were three deaths not associated with respiratory complications rather due to sepsis and multiple organ failure onsets from birth. There was no nasal trauma noted and flow rates ranged from 2–8 lpm. Diameter of the nasal cannula is 2 mm. No nasal mucus plugging was noted.

Discussion

High flow nasal cannula via the VapoTherm delivering supplement breathing gas is a safe adjunct to the respiratory support of the pre-term infant. Gas is delivered at BTSP in the form of water vapor which is at equilibrium with the lung in water content (44 mg/L) and partial pressure (47 mmHg). The small NC allows for an open flow system unlike nasal CPAP reducing the risk of iatrogenic injury to the patient.

Conclusion

These results indicate that VapoTherm is a safe and effective adjunct to support infants with respiratory compromise.