

Circuit for Bubble CPAP

Kaur, *et al.*(1) describe a simple and inexpensive bubble CPAP for use in resource poor settings. Bubble CPAP in its most basic form has been in use since early 1970s. We would like to draw the attention of the readers to certain important issues raised by this article. The simple circuit could do more harm than good if the baby is going to receive unhumidified and cold air. Addition of an effective humidifier would increase the cost ten fold. The use of humidifiers is not as simple as it may sound. Air at 37°C and 100% humidity carries 44mg/L of water. But once this heated and humidified air enters the tubing to be carried to the patient end, it condenses resulting in “rainout” and if this water trickles into the patient airway, it might result in airway collapse and pneumonia. Herein lies the importance of having a heating mechanism in the tubing to the patient end. If commercially available tubings are used, this would mean an additional cost of rupees 1200/-.

The authors have mentioned that CPAP can be delivered by nasal prongs. The system described and depicted in the figure may not be compatible with the commercially available binasal prongs as the figure shows only one tube connected to the interface. Under the discussion section, the authors have stated that endotracheal tube or a large bore suction catheter cut down to be used as a single prong CPAP is as comfortable as a more expensive nasal prongs. But the study quoted by the authors(2) has used a soft ET tube cut as a nasal prong inserted to a distance 2-3 cm instead of a nasopharyngeal prong. Hence the level of comfort of both these patient interfaces may not be directly comparable. Moreover, there is

enough evidence to state that short binasal prongs are better than single, nasopharyngeal prong(3).

The oxygen saturation targets suggested by the authors (92-98%) are higher than the standard recommendations. Any saturation beyond 95% in preterm babies would significantly increase the risk of hyperoxia and attendant complications. The authors state that “in areas where saturation monitors are not available, bubbling CPAP would be safe”. We think this statement sends a wrong message that saturation monitoring is not required during CPAP administration. On the contrary, saturation monitoring should be mandatory while using CPAP.

An indigenously developed low cost device is certainly welcome but not at the cost of compromised safety and potential harm.

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A Simple Circuit to Deliver Bubbling CPAP: Not So Simple!

We compliment Kaur, *et al.*(1) for bringing up the focus on the utility of CPAP in preterm neonates with respiratory distress. The indigenous CPAP circuit depicted in this article was first described by

Gregory, *et al.*(2) and has been used all around the world including Indian neonatal units for more than three decades. However, while trying to bring down the costs of any equipment, compromising on the safety features can be counter-productive.

This circuit has its limitations. Application of CPAP to a neonate includes not only providing stable