TITLE:**DOES HYPOCAPNIA AFFECT CEREBROVASCULAR CHANGES IN CHILDREN WHEN DESFLURANE REPLACES ISOFLURANE?**

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INTRODUCTION: Although desflurane (Des) may provide for faster anesthetic emergence than isoflurane (Iso)(1), it may be associated with an increase in cerebral blood flow velocity (CBFV)(2). This study assesses whether mild hypocapnia can prevent changes in CBFV when switching from Iso to Des in children.

METHODS: With REB approval 10 healthy children scheduled for urological surgery were enrolled. Each patient randomly received Iso 1 MAC at either 30 or 40 mmHg end-tidal CO₂ (ETCO₂) followed by Des 1 MAC at the same ETCO₂. The same sequence was repeated at the other ETCO₂. CBFV was measured at steady-state for each agent and ETCO₂. Heart rate, blood pressure and temperature were recorded simultaneously.

RESULTS: The age and weight were 45.6±15.7 mo and 15.4±2.6 kg, respectively. There were no changes in CBFV or BP when Iso was switched to Des, at either ETCO₂. (Table) There was an increase in HR when Iso was substituted with Des at 30 mmHg ETCO₂ ($P<0.05$).

ETCO ₂	30	30	40	40
AGENT	Iso	Des	Iso	Des
CBFV (cm/s)	41.6(9.2)	48.3(8.4)	69.9(13.7)	68.9(11.6)
BP (mmHg)	60.2(6.2)	57.2(7.3)	60.9(8.1)	57.5(5.1)
HR	102.8 (10.1)	108.7 (12.5)	103.4 (9.8)	108.3 (11.6)

Values are mean(SD)

DISCUSSION: Switching from Isoflurane to Desflurane anesthesia in order to facilitate rapid emergence appears not to have an effect on CBFV in healthy children.

REFERENCES:

- 1) *Br J Anaesth.* 76:362-4.
- 2) *Acta Anaesthesiol Scand.* 47:932-8.