

Exercise - COMPARE WAKE UP AFTER SHORT ANESTHETICS

To: Anesthesia Residents, Faculty, Students

A core competency of an anesthesia professional is to be able to choose and use inhalation anesthetics for general anesthesia. This includes knowing how to achieve quick induction and emergence and minimize drug waste.

In this exercise you will use the Gas Man® computer simulation to attain this competency. The Student Edition of Gas Man is free. Individuals and Organizations can upgrade to Gas Man Professional.

Download Gas Man program, user manual, workbook from www.medmansimulations.org

COMPARE WAKE UP AFTER SHORT ANESTHETICS

Using Gas Man, administer general anesthesia at 1.0 MAC brain tension with isoflurane, sevoflurane, and desflurane.

Ignore the fact that induction and secured airway may have been accomplished with IV or inhaled induction.

Under the Control tab, choose Semi-closed breathing circuit which is similar to clinical.

Use the same FGF for each, 2 LPM.

Start with higher FGF for the first 5 minutes to bring VRG tension to 1 MAC.

Use VA = 4 LPM and CO = 5 LPM.

Administer anesthesia for 1.5 hours

Then, with FGF = 10 LPM and VA and CO unchanged, accomplish wake up as follows.

Observe the time for VRG tension to fall to 0.33 MAC, the typical level for wake up

For MAC and MAC Awake, use the following numbers, respectively

Iso	1.1	0.37
Sev	2.1	0.70
Des	6.0	2.00

Record the Wake up times in minutes and seconds.

Create an overlay of the simulations and Show VRG over MAC and observe the curves. Use your computer's Copy or Print command to capture the pictures and graphs.

As a further exercise, record the time it takes for the VRG to reach 0.2 MAC, 0.1 MAC, and .05 MAC. 1

Email the wake up times and screen captures to your Course Leader

If you have Gas Man Professional, save the .gas files, name them, and optionally enter descriptions in File / Simulation Description.

1 Eger EI, Shafer SL. Context-Sensitive Decrement Times for Inhaled Anesthetics. Anesth Analg 2005 101: 688-696 (Tutorial).

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www.gasmanweb.com, www.medmansimulations.org