Reviewer's report

**Title:** Desflurane Consumption During Automated Closed-Circuit Delivery Is higher Than With a Conventional Anesthesia Machine Used With A Simple Vaporizer-O2-N2O Fresh Gas Flow Sequence.

**Version:** 1  **Date:** 15 May 2008

**Reviewer:** Goverdhan Puri

**Reviewer's report:**

Study to show that computerized drug delivery may not be always more efficient than manual control.

But unfortunately this advantage of manual adjustment has only been shown in initial short period of anaesthesia - 40 minutes to be more specific.

1. METHODS: How were the anaesthetic consumption calculated or retrieved from the machines: needs more specific explicit details.

2. Results:
   a. Why only first 40 minutes chosen especially as the trend of the end-tidal anaesthetic concentrations is upwards.
   b. What about the BMI of the two group of patients
   c. When was the surgery started? Or is it that the data belongs to presurgical period only. One need to know these things as the uptake and variability of endtidal concentrations may change with changing cardiac output associated with surgical stimulation etc.
   d. Difference in anaesthetic requirements in two techniques is decreasing over period of time as shown in the Table 1.
      The difference may be much more in individual patients as shown by the very high variability (17.2 + 4.8 ml) in the consumption in Zeus group.
      Difference decrease with time and may not be apparent in very long surgical cases.
   e. Fig 1 only shows the combined data of the groups in mean and sd format. Individual concentration curve needs to be given to evaluate the efficiency of the ADU with preset flows for attainment of predefined desflurane endtidal concentrations.
      Or the peak to peak difference between different patient groups may be given.

End-tidal concentration also seems to be increasing over period of time in ADU group. Authors may present the correlation coefficient of time with the endtidal conc. of anaesthetic agent to refute this worry.
f. Similarly in Fig 2 the concentration of N2O as well as FiO2 is changing over time and what will happen to these concentrations at later period beyond 40 minutes remains speculative and may affect the use of this algorithm in longer surgical procedures.

Authors must clarify these points before the report is considered suitable for publication.

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I declare that I have no competing interests.