

Aisys™ CS² Anesthesia Delivery System with Et Control Software

Literature Summary



Journal articles

Desflurane consumption with automated vapour control systems in two different anaesthesia machines. A randomized controlled study.

Mostad D, Klepstad P, Follestad T, Pleym H. *Acta Anaesthesiologica Scandinavica*. 2021;65(7):895-901. doi:10.1111/aas.13825

- ▶ Under clinical conditions, the authors found a reduction in desflurane consumption when using automated gas delivery devices compared to low-flow anaesthesia. Both devices were reliable in use.

Comparative Study of Automated End Tidal Control Versus Manual Fresh Gas Flow Adjustment with Respect to Gas Usage and Delivery during Low Flow Anesthesia.

Swami A, Arora K, Puppala P. *Anesthesia and Critical Care*. 2020;02(02). doi:10.26502/acc.014

- ▶ The authors concluded, automatic implementation of low-flow anesthesia using end-tidal control is a good system for conserving the consumption of gases and reducing the number of adjustments needed to maintain depth of anesthesia.

Target-controlled inhalation anaesthesia: A cost-benefit analysis based on the cost per minute of anaesthesia by inhalation.

Ponsonnard S, Galy A, Cros J, Daragon AM, Nathan N. *Anaesthesia Critical Care & Pain Medicine*. 2017;36(1):33-37. doi:10.1016/j.accpm.2016.02.005

- ▶ TCIA appears to have a favourable cost-benefit ratio. Despite a number of factors, which would tend to minimise the saving and increase costs, the authors still managed to observe a 13% savings. Shorter duration of surgery, type of induction, as well as the way HA concentration is targeted, may influence the savings results obtained.

End-tidal control vs. manually controlled minimal-flow anesthesia: a prospective comparative trial.

Wetz AJ, Mueller MM, Walliser K, et al. *Acta Anaesthesiologica Scandinavica*. 2017;61(10):1262-1269. doi:10.1111/aas.12961

- ▶ End-tidal control is a superior technique for setting and maintaining oxygen and anesthetic gas concentrations in a stable and rapid manner compared with manual control. Consequently, end-tidal control can effectively support the anesthetist.

Automated control of end-tidal sevoflurane in living donor hepatectomy, a prospective, randomized, controlled study.

Kandeel A, Elmorshedi M, Abdalla U, et al. *Egyptian Journal of Anaesthesia*. 2017;33(3):233-237. doi:10.1016/j.egja.2017.05.007

- ▶ Automated control of EtSev during anesthesia of living donor hepatectomy significantly lowers sevoflurane consumption and decreases required user interventions without deleterious effect on patient safety.

Journal articles

Accuracy of inhaled agent usage displays of automated target control anesthesia machines.

Dehouwer, A., Carette, R., De Ridder, S. et al. *J Clin Monit Comput* 30, 539–543 (2016). <https://doi.org/10.1007/s10877-015-9746-z>

- ▶ The authors conclude, cumulative agent usage displayed by the Aisys, Zeus and FLOW-i® anesthesia machines is within 10% of the measured consumption, except for low consumption cases (<3 mL sevoflurane, <20 mL desflurane). The differences may be due to either measurement error or cumulative agent display error. The current results can help the researchers decide whether the displayed amounts are accurate enough for their study purposes. The extent to which these discrepancies differ between different units of the same machine remains unstudied.

A Ten-Year Audit of Fresh Gas Flows in a New Zealand Hospital: The Influence of the Introduction of Automated Agent Delivery and Comparisons with Other Hospitals.

Kennedy RR, French RA. *Anaesthesia and Intensive Care*. 2014;42(1):65-72. doi:10.1177/0310057x1404200112

- ▶ The authors' findings suggest that time spent in the Et Control automated delivery mode increased from 35% to 63% and the users valued the workload reduction. In daily practice, with a wide range of practitioners at different levels of training and a broad patient mix, mean flow rates of around 1.3 l/minute with median flows in the range 0.5 to 1.0 l/minute are achievable targets.

Cost efficiency of target-controlled inhalational anesthesia.

Potdar M, Kamat L, Save M. *Journal of Anaesthesiology Clinical Pharmacology*. 2014;30(2):222. doi:10.4103/0970-9185.130026

- ▶ Both methods are equally stable and safe for patients. The consumption of volatile agents was significantly increased in the AUTO-ET group. EtC considerably reduces the number of key presses.

End-tidal versus manually-controlled low-flow anaesthesia.

Lucangelo U, Garufi G, Marras E, et al. *Journal of Clinical Monitoring and Computing*. 2013;28(2):117-121. doi:10.1007/s10877-013-9516-8

- ▶ Low-flow anaesthesia delivered with an anaesthetic machine able to automatically control EtAA and EtO₂ provided the same clinical stability and avoided the continuous manual adjustment of delivered sevoflurane and oxygen concentrations. Hence, the anaesthetist could dedicate more time to the patient and operating room activities.

Financial and Environmental Costs of Manual versus Automated Control of End-Tidal Gas Concentrations.

Tay S, Weinberg L, Peyton P, Story D, Briedis J. *Anaesthesia and Intensive Care*. 2013;41(1):95-101. doi:10.1177/0310057x1304100116

- ▶ The authors conclude that anaesthesia machines with the option of automated control of end-tidal gases can significantly decrease volatile agent consumption with financial and environmental benefits by increasing participation in low-flow anaesthesia.

Automated control of end-tidal inhalation anaesthetic concentration using the GE Aisys Carestation™

Singaravelu S, Barclay P. *British Journal of Anaesthesia*. 2013;110(4):561-566. doi:10.1093/bja/aes464

- ▶ Automatic implementation of low-flow anaesthesia using Et Control allows the user to set and maintain a desired end-tidal volatile concentration while using less volatile agent.

NOTE: Et Control in the United States is indicated for patients 18 years of age and older.

Not all products or features are available in all markets. Contact a GE HealthCare representative for more information. Please visit www.gehealthcare.com. Data subject to change.

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