

# TOTAL INTRAVENOUS ANESTHESIA IN DOGS

## **Charlotte Sandersen**

Department of Clinical Sciences, Faculty of Veterinary Medicine, University of Liege, Belgium

charlotte.sandersen@ulg.ac.be

Total intravenous anaesthesia (TIVA) is defined as a technique of general anaesthesia using a combination of agents given solely by the intravenous route and in the absence of inhalational agents. The intravenous route has long and efficiently been used to administer anaesthetic drugs, but inhalational anaesthesia with modern drugs and machines had revolutionized human anaesthesia from the 1960s. Since then, inhalational anaesthesia has been considered as gold standard of anaesthesia maintenance, especially because of its rapid onset and recovery and the ease of controlling depth of anaesthesia.

Recently, TIVA has found its place as preferred technique among human anaesthetists for two main reasons: First, unlike intravenous agents of the past, the pharmacokinetic and pharmacodynamic properties of modern drugs like propofol and the newer synthetic, short acting opioids like remifentanyl make them very suitable for administration by continuous infusion. Second, new concepts in pharmacokinetic modeling and advances in computer technology have allowed the development of sophisticated delivery systems and the concept of so-called target-controlled infusion (TCI).

For veterinary patients, as for man, inhalational anaesthesia has been considered as mainstay of general anaesthesia, but due to the technical and financial concerns related to inhalational anaesthesia, many veterinary patients missed the benefits of inhalation anaesthesia. Fortunately, with the development of new drugs, TIVA for veterinary patients is no longer a simple way of making them sleep but a real alternative to inhalation anaesthesia, providing plentiful of benefits to our patients.

Numerous studies have evaluated different drug combinations for TIVA use in dogs, containing alfaxalone, propofol, remifentanyl, alfentanil, fentanyl, midazolam, or medetomidine. The following table summarizes recent publications on TIVA use in dogs. Anaesthetists have to be aware that most drug combinations induce considerable respiratory depression, which makes mechanical ventilation compulsory and therefore reduces the advantages of inhalational agent free anaesthesia. However, TIVA remains an easy technique to provide excellent quality anaesthesia to our patients.

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