Inhaled sedation with halogenated agents in the Intensive Care Unit: A literature mini-review

J.M. DEL RÍO GUTIÉRREZ¹, L. DOMENECH MORAL¹, H.C. GARCIA DIAZ¹, P. SANCHO SANCHEZ¹, P. LALUEZA BROTO², R.S. CONTRERAS MEDINA², A. GRACIA MOYA¹, A.G. AREVALO BERNABE¹, A. PUERTAS SANJUAN¹, J. SANTANDER REVOREDA¹, J.C. JUAREZ GIMENEZ¹.

¹VALL D'HEBRON HOSPITAL, PHARMACY, BARCELONA, SPAIN.
²VALL D'HEBRON HOSPITAL, INTENSIVE CARE UNIT, BARCELONA, SPAIN.

BACKGROUND AND IMPORTANCE

Sedatives are administered to reduce anxiety and stress in mechanically ventilated critically ill patients. Midazolam and propofol are the sedatives of choice, but their behavior is difficult to predict.

INHALED SEDATION WITH HALOGENATED AGENTS → increased speed of action and elimination → better sedation control → Bronchodilator, cardioprotective and neuroprotective effects → ALTERNATIVE TO CONVENCIONAL SEDATION WITH INTRAVENOUS DRUGS

OBJECTIVE

To review the available evidence on the use of sedative inhaled gases in the Intensive Care Unit (ICU).

METHODS

A literature research was conducted → Pubmed and Google Academics → The terms ‘Inhaled sedation’ and ‘Critical care’ were used

ARTICLE SELECTION:

Articles comparing inhaled sedation directly with conventional sedation

Articles describing pioneering uses of inhalation sedation

Another research with the same keywords was performed using TripDataBase and UpToDate to locate meta-analyses and clinical practice guidelines

RESULTS

236 articles were located and 25 were selected. No randomised clinical trials were found. Four meta-analyses were located.

• EFFECTIVENESS: Inhaled sedation is described to be effective to achieve deep sedation and to reduce sedation and extubation time.

• POSSIBLE CARDIOPROTECTIVE ROLE: It favors a decrease in troponin levels.

• DIFFICULT SEDATION: Its use is relevant in patients who do not achieve adequate sedation with conventional sedation.

• GASSES USAGE: Gasses used were isoflurane and sevoflurane.

Consideration of inhaled sedation according to clinical practice guidelines developed by different societies

They consider inhaled sedation as an alternative in patients with bronchospasm and in patients who are difficult to sedate.

CONCLUSIONS

• It can be concluded that the use of inhaled gases reduces the extubation and awakening time in critically ill patients. A reduction in troponin concentration is observed. However, these are not ‘hard’ variables that demonstrate an important clinical impact.

• Their use may be of interest in patients with bronchospasm or in those who do not achieve an adequate sedation with conventional high-dose sedatives.