

## Practice study on the use of Gamma-OH in pre-hospital emergency medicine

Abriat Amandine, Jean-Pierre Tourtier, et al. Emergency Medical Department. Fire Brigade of Paris..

**Introduction:** Nearly 50 years after its discovery, Gamma-OH (GOH) is used less and less in pre-hospital emergency medicine. Yet it offers good hemodynamic tolerance, is not much of a respiratory depressant and is easy to use in extra-hospital situations. In the absence of recent practice studies, we determined reporting its most frequent indications in the current pre-hospital setting as the main objective. Secondary objectives were to assess compliance with proper use, associated anesthetics and the occurrence of complications.

**Material and methods:** Retrospective monocentric practice study in a pre-hospital emergency medical service with 6 mobile intensive care units (MICU). Inclusion criteria: all patients who received GOH administration in a pre-hospital situation. Data collected from medical observation sheets were epidemiological, clinical, therapeutic (indication and dose of Gamma-OH administered, associated hypnotic and/or analgesic treatments) and safety (adverse events, complications from anesthetics).

**Results and Discussion:** From 01/01/2015 to 12/31/2015, 111 patients were included, with a mean age of 51 years [3-91] and 81 (73%) men. Prescription of GOH was related to: in 61 (55%) cases, return of spontaneous circulation (ROSC) after cardiac arrest; in 19 (17%) cases, coma; in 17 (15.3%) cases, severe trauma, including 9 associated with severe head trauma (SHT); in 7 (6.3%) cases, an isolated SHT; in 6 (5.4%) cases, acute respiratory distress with reduced consciousness; and in one case, a burn patient. Note that among the severe trauma patients there were 4 victims of multiple ballistic wounds in the November 13 attacks that received maintenance dose of GOH after tracheal intubation using rapid sequence induction.

After tracheal intubation, maintenance of sedation was performed by GOH alone in 26 (23.4%) cases; by GOH associated with sufentanil in 27 (24%) cases and GOH+midazolam+sufentanil in 54 (48.6%) cases. In adults (n=109), the initial dose was 60 mg/kg in the majority of cases (85%) as recommended, and 30 mg/kg in 10% of cases. This administration was followed by a second half-dose injection in 16 (14%) cases.

No anaphylactic complications were reported. Only 2 episodes of hypotension were observed in patients who received it with midazolam.

**Conclusion:** Because of its ease of use and a low complication rate, Gamma-OH proves even today to be a relevant product in pre-hospital situations or in disaster medicine. Gamma-OH remains in favour with our MICU physicians, particularly in cases of ROSC after cardiac arrest or severe trauma. These preferences are explained by facilitating the management of anesthesia, especially during long and difficult transportation by stretcher. A prospective study should be started to compare it to other products.