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Malignant hyperthermia: what we may need to have at hand

Hipertermia maligna: lo que tendríamos que tener a la mano

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Malignant hyperthermia (MH) is often neglected in anesthesia because of its rare incidence (around 1:100,000 general anesthetics). However, when it occurs, it becomes the anesthesiologist's nightmare. In the United States, Canada, and in most European countries, it is mandatory to store dantrolene wherever halogenated agents and/or succinylcholine are used by anesthesia providers (including sites that use only succinylcholine and no volatiles for electroconvulsive therapies). Unfortunately, its availability in Colombia is not mandatory or universal (1).

An excellent International Congress on Perioperative Emergencies was held recently by the Society of Anesthesiology in Antioquia. Malignant hyperthermia was discussed first by Dr. Luis Mauricio García, who has led anesthesiologists in Antioquia towards a safer anesthesia practice by facilitating the procurement of dantrolene vials across the region, and offering his help during MH crises with prompt delivery of the vials.

Dr. Carlos Ibarra—an international expert in malignant hyperthermia—presented excellent content on how to recognize and manage an MH crisis, which was very well received by the audience. His presentation created awareness about the need to keep malignant hyperthermia kits in our wards. Each MH cart should contain an amount of dantrolene and ancillary equipment needed for the initial treatment of the heaviest patient (2). We propose that the each MH kit should contain a minimum of 14 vials of 20 mg of dantrolene, 1000 mL of sterile water, 4 vials of 8.4% sodium bicarbonate, 4 vials of calcium gluconate, 4 arterial blood gases syringes, one bag of 10% dextrose -250 mL, at least ten 60mL

syringes, ten 18G hypodermic needles, one mannitol bag, three vials of furosemide, one amiodarone vial, tubes for blood samples (purple, yellow, blue), two pairs of activated charcoal filters, kits for arterial and central line placement, a Fowley catheter, anesthesia circuit tubing, the MH management checklist, and the contact information for additional sources of dantrolene. We hope that in the foreseeable future we can also include the contact information of a Colombian malignant hyperthermia patient referral center.

The MH management checklist can be downloaded from the SADEA website for printing and sticking on the cart (3). Simulations on how to manage this crisis must be carried out regularly in institutions (4), including the nurses. Quoting Dr. Ibarra: “everyone, including the surgeon, nurses, anesthesiologists, and residents should be ready to mix vials of dantrolene and sterile water.” There is no doubt that these extra hands are essential to make sure the vials are ready in time. One vial of 20 mg of dantrolene should be mixed with 60 mL of sterile water for injection, and about 36 vials may be needed for the treatment of an adult patient (5). There is a more concentrated form of dantrolene sodium, Ryanodex, which comes in 250 mg vials and requires 5 mL of sterile water to solubilize; this presentation could be obtained in the future to expedite drug administration (5).

In conclusion, it seems that working to secure malignant hyperthermia kits is something that needs to be done in every setting where the triggers are used. In Antioquia, it would be ideal to create a database of families with this diagnosis; moreover an alert system that can be accessed by any healthcare provider in

Colombia should also be created. Ensuring the availability of laboratories and resources for proper diagnosis of this entity in Colombia could be a future project for appropriate classification and diagnosis of families at risk.

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None declared.

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