Factors Influencing Malignant Hyperthermia Preparedness Among Anesthesiologists

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Background

Malignant hyperthermia (MH) remains a rare, poorly understood, and potentially fatal event in the perioperative setting [1]. Significant clinical and technological progress has improved outcomes in patients experiencing MH from nearly 100% mortality to 6.5% noted in 2005 [2,3,4].

With respect to the intraoperative management of MH, use of activated charcoal filters is, arguably, the most significant such advance in the last 10 years. Previous data have analyzed factors predictive of MH and patient outcomes; however, very little data describes factors influencing provider preparedness [2,3].

Objective

• To determine Anesthesiologist preparedness and knowledge regarding malignant hyperthermia management in the post-charcoal filter time.

Methods

We conducted an IRB approved study employing paper and online surveys that we believe is the first to examine the education and practices of anesthesia providers regarding MH.

Surveys were randomly distributed to attendees at the 2014 ASA and PGA, as well as available online. For the purpose of our review, we focused on respondents who were anesthesiologists.

N=100, all Anesthesiologists

Results

Significant findings include high penetrance in knowledge regarding basic management of acute MH including high fresh gas flows (>87.0%), replacing CO2 absorbent (>78%), availability of dantrolene (>92.7%), and removal of vaporizers (>85.4%).

Knowledge of activated charcoal use was significantly less (P=0.007) relative to these standard anesthesia machine precautions.

Attendance of MH specific training was the most significant factor predicting knowledge of activated charcoal use (P=0.007).

An association was also seen between MH crisis simulation and awareness of activated charcoal (P = 0.007). Recently trained anesthesiologists (<7 years in practice) tended to have less formal training on MH but did show a general trend towards being more familiar with activated charcoal usage.

Significantly less knowledge regarding activated charcoal products than traditional machine preparation.

Conclusion

• Our survey highlights the need for increased training in MH management among practicing anesthesiologists, especially those more removed from residency training.

References