Malignant Hyperthermia

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Intervention

Malignant Hypertension

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Introduction

Pathophysiology

MH is a catecholaminergic disease characterised by an increase in sympathetic tone that results in a hypertensive crisis. It is a common cause of acute hypertension and can be life-threatening if not treated promptly. The pathogenesis of MH involves vasoconstriction, increased peripheral resistance, and reduced cardiac output. The diagnosis of MH is made through a combination of clinical symptoms, laboratory tests, and echocardiography.

Signs & Symptoms

MH is characterised by a variety of symptoms, including headache, dizziness, nausea, vomiting, and chest pain. The most common symptom is a severe headache that is throbbing and unilateral. Other symptoms include diaphoresis, pallor, and diaphoresis.

References Cited


Additional Sources

Figure 2: “Uncontrolled myotonic Ca2+ release is the key to malignant hyperthermia. The most prominent cytosolic Ca2+ elevation results from the freeing of stored sarcoplasmic Ca2+ triggered by ryanodine receptor type 1 (RyR1). While volatile anesthetics stimulate Ca2+ release via RyR1, ryanodine acts indirectly by activating the ryanodine-sensitive calcium release channel, a nonspecific cation channel, resulting in continuous local depolarisation. The depolarisation can trigger propagated action potentials and will further activate muscle Ca2+ release. Figure 2 from: Cain, C. L., Kious, M. L., Gettlin, L., & Novalija, S. (2016). Malignant Hypertension crisis: Optimizing patient outcomes through collaboration and interdisciplinary communication. AORN Journal, 104(2), 302-309. doi:10.1016/j.aorn.2016.06.033

Figure 3: Malignant hyperthermia is characterised by a variety of symptoms, including headache, dizziness, nausea, vomiting, and chest pain. The most common symptom is a severe headache that is throbbing and unilateral. Other symptoms include diaphoresis, pallor, and diaphoresis. The diagnosis of MH is made through a combination of clinical symptoms, laboratory tests, and echocardiography.