Malignant

Hyperthermia

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Disclosures.....
WHAT IS MH?

LINK TO RYR₁

MHAUS AND NAMHR

HOW TO HAVE GENERAL ANESTHESIA AND NOT GET MH
Dr. Michael Denborough
1929 - 2014
Important MH Principles
MH Pathophysiology

Exposure to Triggering Anesthetic Agent
Volatile Inhalational Anesthetic Gases
Succinylcholine

Depolarization

Sarcolemma
Transverse (T) Tubule
Terminal Cistern of SR
Sarcoplasmic Reticulum (SR)

1. Depolarization
2. Activation
3. Activation
4. Prolonged Open State of RYR1

Increased Intracellular Ca²⁺
Dantrolene Sodium

Sustained Muscle Cell Activation and Contraction
Increased Aerobic and Anaerobic Metabolism

Heat Production
Muscle Cell Hypoxia and Death

Malignant Hyperthermia Syndrome
Metabolic and Respiratory Acidosis
Muscular Rigidity
Rhabdomyolysis
Hyperthermia
MH Pathophysiology

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C. Lynn
Genetic Basis of MH

RYR1

3D ryanodine from Max Planck Society
As a medical professional, knowing about Malignant Hyperthermia is important to saving lives. MHAUS can help you prepare for an MH emergency, manage a crisis and develop your skills to ensure that you are doing the very best you can for your patients. Use our links below, and if you are still unable to find exactly what you need, you may also search our website using the search box in the upper right of any page.
Patients And Families

Welcome

Malignant Hyperthermia raises many questions, for both the patient, and their families. We're here to help! From basic information about MH, to testing for MH and support, we offer many resources for MH susceptible individuals and their families, to ensure that you are never faced with a crisis. Use our links below, and if you are still unable to find exactly what you need, you may also search our website using the search box in the upper right of any page.

Learn About MH  I Have MH - Now What?  Patient Liaison Committee
ID Tag Program  Testing for MH  Find a Prepared Facility
NMS Information Service  Sample Letters  MHAUS Website Directory
About 500-600 Calls per year: 2015
Awake MH?

Identical *de novo* Mutation in the Type 1 Ryanodine Receptor Gene Associated with Fatal, Stress-induced Malignant Hyperthermia in Two Unrelated Families

Linda Groom, B.Sc.,* Sheila M. Muldoon, M.D.,† Zhen Zhi Tang, Ph.D.,‡ Barbara W. Brandom, M.D.,§ Munkhuu Bayarsaikhan, Ph.D.,∥ Saiid Bina, Ph.D.,# Hee-Suk Lee, M.D.,** Xing Qiu, Ph.D.,†† Nyamkhishig Sambuughin, Ph.D.,‡‡ Robert T. Dirksen, Ph.D.§§

Anesthesiology 2011; 115:938

7 reported cases
How Can You be Anesthetized Safely?
BAD NEWS: If you are here, you are susceptible to MH

GOOD NEWS: If you are here, you are protected

If you have had MH, please enter the registry

Please join MHAUS or our Facebook Group
Being MH Susceptible...
No Anesthesia Gas
Being MH Susceptible... Intravenous only

PROPOFOL
INJECTABLE EMULSION 1%
For IV Administration
200 mg/20 mL
(10 mg/mL)
CONTAINS BENZYL ALCOHOL
Sterile, nonpyrogenic
SHAKZ WELL BEFORE USE
Rx ONLY
Being MH Susceptible...
No Succinylchololnol
Being MH Susceptible...

All other muscle relaxants are OK
Anesthetizing the MH Susceptible Patient
Being MH Susceptible...

YOU.....

- Should wear a Medic-Alert Bracelet
- Do not need dantrolene before surgery
- Do not need a biopsy before surgery
- Do not need to stay longer after surgery
- Can have your surgery in any type of hospital
Malignant Hyperthermia

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