Children's Health Ireland

Crumlin | Temple Street | Tallaght | Connolly

MALIGNANT HYPERTHERMIA

Area of use:	All of organisation ☐	CHI at Connolly ☐	CHI at Crumlin ☒
	CHI at Herberton ☐	CHI at Tallaght ☐	CHI at Temple Street ☐
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1.0 Introduction

Malignant Hyperthermia (MH) is hypermetabolic syndrome triggered by succinylcholine and volatile anaesthetic. It is an acute medical emergency. Successful treatment of malignant hyperthermia depends on early diagnosis and aggressive treatment.

2.0 Definition of Standard Operating Procedure

The term **'Standard Operating Procedure'** is a way of carrying out a particular course of action and includes operations, investigations, pharmaceutical treatment, examinations and any other treatment carried out.

3.0 Applicable to

To all hospital, staff caring for the child including HCCL pre-operatively, intra-operatively and post operatively.

4.0 Objectives of Standard Operating Procedure

In the case of a patient is at risk of Malignant Hyperthermia due to familial history or a muscle condition that may predispose to MH or a sudden unexpected onset of MH, these guidelines support the action to be taken.

5.0 Procedures

Complications Associated with Malignant Hyperthermia

Signs & Symptoms

- Sudden Increased rise in end tidal CO2
- Tachycardia
- Pyrexia – temperature increasing 1 degree Celsius every 5 minutes
- Mottling of the skin
- Tachypnoea
- Arrhythmias
- Rigidity
- Sweating
- Hypercarbia – leading to respiratory acidosis
- Labile blood pressure
- Reduced renal output leading to renal failure
- Disseminated intravascular coagulopathy
- Compartment Syndrome

Equipment

- Oxygen
- Suction
- Monitoring equipment – ECG, Blood Pressure cuff, Oxygen saturation probe
- Intravenous Access
- Airway tray with appropriate intubation equipment
- Braun Infusion Pump
- Source the Malignant Hyperthermia Management Kit and cold fluids from the Pharmacy room

The Malignant Hyperthermia (MH) Kit includes the following stock:

- New masks with new oxygen tubing
- Dandrolene Sodium (medication reverses effects of MH)
- Water for injection with 60ml syringes
- Cooling Fluids – Sterile Normal Saline stored in bottom of pharmacy fridge.
- Vapour free machine applicable for the patient at risk of MH
- 50ml syringes
- Extension set with valve
- Hydrocortisone, Glucose 50% and mannitol, sodium Bicarbonate and Heparin available
- Selection of needles and syringes
- Blood Gas Syringes

Patients at risk of developing Malignant Hyperthermia will be first on the theatre list – vapour free anaesthetic machine will be set up for the planned patient by the Clinical Engineer. This patient will have Total Intravenous Anaesthesia (TIVA). The MH kit will be accessible. The patient may be recovered in an isolated area of the Recovery Room or as per Anaesthetic Consultant.

6.0 Implementation Plan

This document is available to new nursing staff coming to work in the Theatre Department. It is accessible to all staff at all times in the Theatre Conference Room. There is biannual education on this topic to maintain competence and awareness of this condition.

7.0 Evaluation & Audit

The MH Kit is sealed with Tag and checked daily. On a monthly basis, products in the MH kit are checked for expiry dates and contents are checked to be in working order. Every three months' medication audit is carried out in the department by the Quality Department, which includes the MH Kit.

8.0 References

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