

Intrathecal Baclofen - Paediatric Full Clinical Guideline

Reference no.: CH CLIN G83/June 18/v004

Purpose

To provide clear guidance to ensure the efficient management of children presenting with the symptoms of Baclofen **underdose/withdrawal** and **overdose**

Aim & Scope

This guideline is aimed at medical and nursing staff involved in the care of children with Intrathecal Baclofen (ITB) pump presenting at the Children's Emergency Department.

Background

Baclofen is a very potent but high risk treatment modality for spasticity of cerebral or spinal origin, usually involving life-long treatment. It can also be used for selected dystonias and in the acute stage management of severe spasticity associated with some traumatic brain injuries.

Intrathecal Baclofen treatment requires minute quantities of the drug which produces hardly any central effects in therapeutic doses.

Over-dosage and under-dosage can lead to very serious consequences and can be due to a human error in programming the pump. It is also due to displacement/detachment or pump malfunction.

Implementing the Guideline:

Baclofen Underdose

Keep Baclofen under-dose or withdrawal in mind for any patient on Intrathecal Baclofen who develops unusual symptoms.

These could be due to a malfunction of the Baclofen system; while under-dose is milder and inconvenient; Baclofen withdrawal can be **serious**.

The symptoms of under-dose are:

- Increase in Spasticity
- Slight drowsiness.
- Hypotension
- Itchiness.

The symptoms of Baclofen withdrawal syndrome are:

- High fever
- Lethargy,
- Severely increased spasticity with rigidity.

Sometimes this leads to rhabdomyolysis with renal failure and in rare cases can lead to multiple organ system failure and death.

If under-dose is likely, rapid diagnosis and correction of the cause is essential:

Under-dose is diagnosed with definite symptoms and increase in tone without alternative diagnosis and normal CPK.

- Patient would need **urgent review** by senior paediatrician (Paediatric on-call consultant or CED consultant) to make the diagnosis and will also need **urgent discussion with the neurosurgical team at Nottingham**.
- Administer oral Baclofen
 - Child 2 - 6 yrs - 20-30mg daily in divided doses
 - Child 6 - 8 yrs - 30-40mg daily in divided doses
 - Child 8 - 18yrs - 60mg daily in divided doses
- Contact the on-call neurosurgical team at Nottingham for advice on further management.
- Obtain blood samples for Plasma CPK, U&E and full blood count. Plasma CPK increase will suggest Baclofen withdrawal syndrome. Search for alternative condition such as infection.

Consider administering the following medication after speaking to the paediatric consultant on-call **and** the neurosurgical team (QMC or Sheffield):

- IV Diazepam (intermittent or continuous infusion)
- Dantrolene

Baclofen Overdose

Consider Baclofen overdose in any unusual symptoms in a child whose pump has been refilled in the previous 48 hours. This is usually due to errors in programming the pump.

If an overdose has been detected, arrange to admit patient to HDU, even if asymptomatic and discuss urgently with the neurosurgical team at Nottingham.

Symptoms of overdose;

- Drowsiness
- Respiratory depression
- Seizures
- Loss of consciousness leading to coma.

Management:

There is no specific antidote for ITB. The half-life of the drug is around 4 hours and it will be eliminated from the body in 8 hours. Therefore, the management of overdose of ITB is largely cardiorespiratory support.

Check capillary/arterial gases and manage airway and breathing as appropriate with intubation and ventilation if necessary. Intravenous fluids to support circulation.

Contact urgently the Neurosurgery team at QMC in Nottingham for advice on further management.

EMPTYING AND ADMINISTRATION OF INTRATHECAL BACLOFEN

This procedure should only be carried out by persons who have completed refill training or are being supervised by a person who has completed refill training and there is a clinician available with a programmer.

At present, we do not provide a service of emptying and refilling ITB pumps in Derby. This procedure should be carried out by the neurosurgical team in Nottingham or Sheffield, if the patient is known to the neurosurgical team in Sheffield.

Documentation Controls

Development of Guideline:	Dr H Faza Updated 27/05/2018
Consultation with:	Paediatric Consultants, Emergency Department, Matron & Senior Sisters
Approved By:	Dr R Bowker (Lead Clinician) - June 2021 Integrated Care Division - 11/6/18
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