Children's Health Ireland
Crumlin | Connolly

Protocol for the Administration of Oral/Rectal Ibuprofen by Nursing Staff in Triage in the Children's Health Ireland Department of Emergency Medicine at Crumlin and Connolly

Policy [ ] Procedure [ ] Protocol [x] Guideline [ ]

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Revision	**Date Approved**	**Review Date**	**Reason for Change**
02	07/09/2020	6-month pilot	Changes to dosing post pilot

This document to is be used in ED CHI at Crumlin and UCC CHI at Connolly until a cross site CHI policy is implemented

Table of Contents

1.0 Introduction

Pain is a common symptom among paediatric patients presenting for triage in Emergency Departments or Urgent Care Centres. Early pain management can improve the quality of the patient experience while waiting for acute assessment and management. In addition, early administration of antipyretics in children presenting with a fever ≥ 38° Celsius can increase patient comfort and reduce parent anxiety.

1.1 Aim of the protocol

The aim of this protocol is to expedite antipyretic/analgesia therapy for children presenting to a Paediatric Emergency Department (PED) or Urgent Care Centre (UCC) in the Children's Health Ireland (CHI) at Crumlin and Connolly. To establish a standard of best practice for the safe preparation and administration of oral/rectal ibuprofen to patients with mild to moderate pain and/or pyrexia at triage by nursing staff.

1.2 Scope of the protocol

This protocol sets out the guidance for the preparation and administration of oral / rectal ibuprofen by triage nurses in a PED or UCC at CHI Crumlin and Connolly.

2.0 Applicable to

This protocol is applicable to:

- Nurses that fulfill the following criteria:
  - Registered nurse (RGN and/or RCN)
  - Have successfully completed Irish Children's Triage System training and competencies in the Department of Paediatric Emergency Medicine
  - Have received training and competencies for the 'Protocol for the Administration of Ibuprofen by Nursing Staff in Triage' *(At the discretion of the CNF/CEF and CNM3 in* the *Department of Paediatric Emergency Medicine)*
  - Have up-to-date certificate in medication safety management training
- Clinical Nurse Managers
  - Ensure that nurses are aware of this protocol
  - Ensure that all nurses within their area(s) of responsibility attend all relevant training prior to using this protocol
- Clinical Nurse Facilitators/ Educators, Community Liaison Nurses, Shift Leaders in the CHI Department of Paediatric Emergency Medicine, Advanced Nurse Practitioners in the CHI Department of Paediatric Emergency Medicine
- Consultant and NCHD staff in the CHI Department of Paediatric Emergency Medicine

This protocol does not apply to:

- Nursing students
- Internship nursing students
- Higher Diploma in Children's Nursing students
- Staff other than those in the Department of Emergency Medicine

3.0 Definitions and Abbreviations

Abbreviations used in this protocol include:
mg – milligram
g – gram
mL – millilitre
kg - kilogram

4.0 Authorisation

This protocol is authorised by CHI at Crumlin Drugs and Therapeutics Committee for use by staff at CHI Department of Paediatric Emergency Medicine staff at Crumlin and Connolly

5.0 Specific Staff Responsibilities

- Staff included within the scope of this protocol, as outlined above, are responsible for the administration of the medication
- A validated pain assessment tool (Appendix 1) must be utilised in triage if using ibuprofen to manage pain. Pain score should be <6/10. (see inclusion criteria below)
- It is important for the nurse to consider the use of other non-pharmacological techniques to relieve pain. These may include immobilization, elevation of a limb or cryotherapy.
- Use of ibuprofen as an antipyretic agent should be considered in children with a fever who appear distressed or unwell. However, paracetamol is recommended as first line analgesic / antipyretic and should be administered first line. Please refer to the Protocol for the administration of oral/rectal paracetamol by nursing staff at triage in the CHI Department of Emergency Medicine
- Parents/guardian should be advised to inform the nurse if any adverse effects are experienced post administration

6.0 Procedure

6.1 Procedure for administration of ibuprofen

6.1.1 Inclusion Criteria

- **One single dose ONLY** is permitted to be administered in accordance with this protocol
- Patients must be ≥ age 3 months
- No other ibuprofen product has been administered in the previous 6 hours, or three times in the last 24hours or the maximum dose has / will not be exceeded
- No other non-steroidal anti-inflammatory containing product has been administered in the previous 8 hours
- Pyrexia ≥38°Celsius with symptoms of discomfort
- **OR** a pain score is identified on a validated pain score tool translating to mild to moderate pain (<6/10) (Appendix 1)

6.1.2 Exclusion Criteria

- Patient is less than 3 months of age
- Patients who are unable to be weighed
- Patients with an existing co-morbidity or receiving any regular prescribed medication
- Patients with varicella zoster infection (chicken pox) due to the increased risk of adverse skin reactions with non-steroidal anti-inflammatory agents
- Allergy to ibuprofen or any of the excipients in product used
- Patients who have previously shown hypersensitivity reactions (e.g. asthma, rhinitis, angioedema or urticaria) in response to ibuprofen, aspirin or other non-steroidal anti-inflammatory drugs (NSAIDs)
- Active or a history of recurrent peptic ulcer/haemorrhage (two or more distinct episodes of proven ulceration or bleeding)
- Patients receiving either anticoagulant (e.g. warfarin, tinzaparin, enoxaparin, unfractionated heparin) or anti-platelet medications (e.g. aspirin, clopidogrel) due to the increased risk of bleeding
- If the nurse has any concerns regarding the administration of ibuprofen to a patient, he/she should contact a medical practitioner/registered nurse prescriber regarding appropriate therapy
- Patients with existing co-morbidities or those receiving regular prescribed medication
- Patients with any degree of / suspicion of renal impairment
- Dehydration; risk of renal impairment (assessed on individual patient basis)
- Immunocompromised patients under the care of malignant Haematology / Oncology or Immunology, or any patient at risk of developing febrile neutropenia / receiving chemotherapy

Drug Interactions:
Despite the exclusion of patients on concurrent regular medications, the following drug interactions should be noted:

- Avoid in patients receiving aminoglycosides, ACE inhibitors / Angiotensin II Antagonists, cardiac glycosides, diuretics, lithium, methotrexate, ciclosporin, probenecid, oral hypoglycemic agents, zidovudine, corticosteroids and SSRIs (selective serotonin reuptake inhibitors)

This list is not exhaustive. For full details contact Pharmacy or see SPC www.hpra.ie

6.1.3 Preparation and Administration of Ibuprofen

- Patient must be ≥ age 3 months
- The patient must be weighed
- Following assessment by the triage nurse, he/she will make a clinical decision if the patient reaches the criteria for inclusion under this protocol.
- The triage nurse must determine:
  - the patient's allergy status and if there is any contraindication to ibuprofen (see exclusion criteria)
  - that the patient has not taken:
    - ibuprofen in the last six hours, or three times in the last 24 hours

Or

- another NSAID in the last 8 hours,

- In discussion with the child/parent, a decision is made as to whether to administer ibuprofen
- The triage nurse documents clearly: Date, time, and amount of medication administrated to the patient
- Documentation is completed electronically in the triage section of Symphony and/or manually on ED single page Kardex
- The triage nurse obtains the medication from the locked medication cabinet in triage room/PED Or the automated dispensing cabinet in the UCC
- The triage nurse confirms the patient's identification with the parent/guardian and the identification wristband by checking a minimum of three identifiers: full name, date of birth and Patient ID. The patient's name and date of birth are confirmed with the parent/guardian (and in addition with the patient where appropriate)
- The triage nurse administers the appropriate medication to the patient
- The triage nurse gives an explanation to patient and/or parent/guardian regarding the use of ibuprofen:
  - Advice to parent(s)/carer(s) if purchasing ibuprofen to not exceed the stated dose
  - Parent(s)/carer(s) should be advised not to administer other ibuprofen containing products or other non-steroidal anti-inflammatory medications concurrently
  - Advice given that if the patient has any reaction to the ibuprofen to attend their GP or an Emergency Department/Urgent Care Centre
- Any incidents / good catches / near misses should be reported via local reporting process

Any patient who falls within the exclusion criteria or who declines ibuprofen should be referred to a doctor on duty to have appropriate analgesia/antipyretic prescribed. This must be documented clearly to ensure complete and accurate record of all doses administered.

6.1.4 Dosage

- **A single dose may be administered in accordance with this protocol**
- **A patient can be given a single dose of 10mg/kg** as detailed in Table 1 below
- Maximum dose: 20-30mg/kg in24hours. Do not exceed the maximum adult dose: 2.4g in 24hours
- Liquid ibuprofen medicines should be given with a suitable measuring device (graduated oral syringe)
- Take PO with or after food; take tablets with plenty of water
- Weight-banded doses detailed in Table 1 (Oral Doses) & Table 2 (Rectal Doses) below

Weight	Dose of Ibuprofen
5kg	50mg Ibuprofen
6kg	60mg Ibuprofen
7kg	70 mg Ibuprofen
8kg	80mg Ibuprofen
9kg	90 mg Ibuprofen
10kg	100mg Ibuprofen
11kg	110mg Ibuprofen
12kg	120mg Ibuprofen
13kg	130mg Ibuprofen
14kg	140mg Ibuprofen
15kg	150mg Ibuprofen
16kg	160mg Ibuprofen
17kg	170mg Ibuprofen
18kg	180mg Ibuprofen
19kg	190mg Ibuprofen
20kg	200mg Ibuprofen
21kg to <26kg	210 mg Ibuprofen
26kg to <30kg	260mg Ibuprofen
30kg to <36kgs	300 mg Ibuprofen
36kg to <40kgs	360mg Ibuprofen
40kg and over	400mg Ibuprofen

Table1: Oral Ibuprofen Dosing

Rectal Dosing

- 60mg suppositories are available
- Suppositories **must not be cut**. Suppositories must not be used if the patient has a history of a bleeding disorder or if the patient is neutropenic (risk of infection)
- Suppositories must not be administered to patients under the care of malignant Haematology / Oncology. (Administration of paracetamol to malignant haematology / oncology patients is not permitted in accordance with this protocol – see exclusion criteria above)

Weight (kg)	Dose of Ibuprofen	Frequency/Maximum Dose
6 to <12kg	60mg (Nurofen® suppository)	For infants **6 – 8kg**, no further dose should be given for eight hours. Max. 3 suppositories in 24 hours (180mg daily) For infants **8 – 12kg**, no further dose should be given for six hours Max. 4 suppositories in 24 hours (240mg daily)
≥12kg	Not suitable. See Footnote*	

Table 2: Rectal Ibuprofen Dosing Suppositories

*Available suppositories (60mg) are suitable for children < 12kg. For children >12kg, use an alternative NSAID (e.g. diclofenac). An alternative NSAID will require a prescription to be written. Administration of an alternative NSAID is not covered as part of this medication protocol.

Products Available:

- Nurofen® for children 100mg/5mL
- Melfen 200mg tablets
- Melfen 400mg tablets
- Nurofen® 60mg suppositories

Available products are subject to change. Please refer to CHI at Crumlin and Connolly Formulary to see most up to date list.

Potential Adverse Effects:

- Gastro-intestinal disturbances including discomfort, nausea, diarrhoea, and occasionally bleeding and ulceration may occur.
- All NSAIDs have the potential to worsen asthma, either acutely or as a gradual worsening of symptoms.
- Hypersensitivity reactions, headache, dizziness, vertigo, hearing disturbances such as tinnitus, photosensitivity, and haematuria. Blood disorders have also occurred. Fluid retention may occur (rarely precipitating congestive heart failure); blood pressure may be elevated.
- Renal failure may be precipitated, especially in patients with pre-existing renal impairment.

Overdose:

Immediate medical attention is required in the event of overdose, even if there are no significant early symptoms.

For specific management of ibuprofen overdose consult the National Poisons Information Centre 01 8092566. Information is also available on Toxbase via the National Poisons Information Centre Website https://www.poisons.ie/Professionals

Action in event of adverse reaction:

- Inform relevant doctor on duty of adverse reaction. The patient should be reviewed by the relevant doctor and a plan of action documented and completed
- Monitor patient closely and record vital signs as necessary
- Document adverse reaction in patient notes
- Inform the patient and/or parent/guardian of what has happened
- A medication incident form should be completed
- The health care professional who discovers the adverse reaction should report this to the Health Products Regulatory Authority via the website www.hpra.ie using the error reporting form at https://www.hpra.ie/homepage/about-us/report-an-issue/human-adverse-reaction-form. Refer to the CHI at Crumlin/Connolly Medication Policy for more information

Action in the event of an error or near miss

- Complete incident form and follow local medication error reporting process.

6.1.5 Instruction for Storage and Handling of Ibuprofen

To be stored in a locked cabinet in the triage room/ locked medicine cabinet in the PED or the automated dispensing cabinet in the UCC; triage nurses to hold the key or swipe access as applicable.

7.0 Implementation and Education Plan

This protocol will be disseminated using existing communication structures within CHI.

8.0 Evaluation and Audit

An audit will be carried out every 6 months to validate adherence to this protocol and evaluate metrics and safety. This audit will be carried out in collaboration by Pharmacy and Nursing from the participating departments.

Appendix 1:

FLACC BEHAVIOURAL PAIN ASSESSMENT TOOL FOR USE IN CHILDREN 2 MONTHS to 7 YEARS			
CATEGORIES	0	1	2
FACE	No particular expression or smile	Occasional grimace or frown withdrawn, disinterested	Frequent to constant quivering chin, clenched jaw
LEGS	Normal position or relaxed	Uneasy, restless, tense	Kicking, or legs drawn up
ACTIVITY	Lying quietly, normal position, moves easily	Squirming, shifting back and forth, tense	Arched, rigid or jerking
CRY	No cry (awake or asleep)	Moans or whimpers; occasional complaint	Crying steadily, screams or sobs, frequent complaints
CONSOLABILITY	Content relaxed	Reassured by occasional touching, hugging or being talked to, distractible	Difficult to console or comfort

Figure 1: FLACC Behavioral Pain Assessment Tool

Figure 2: Wong-Baker FACES Pain Rating Scale

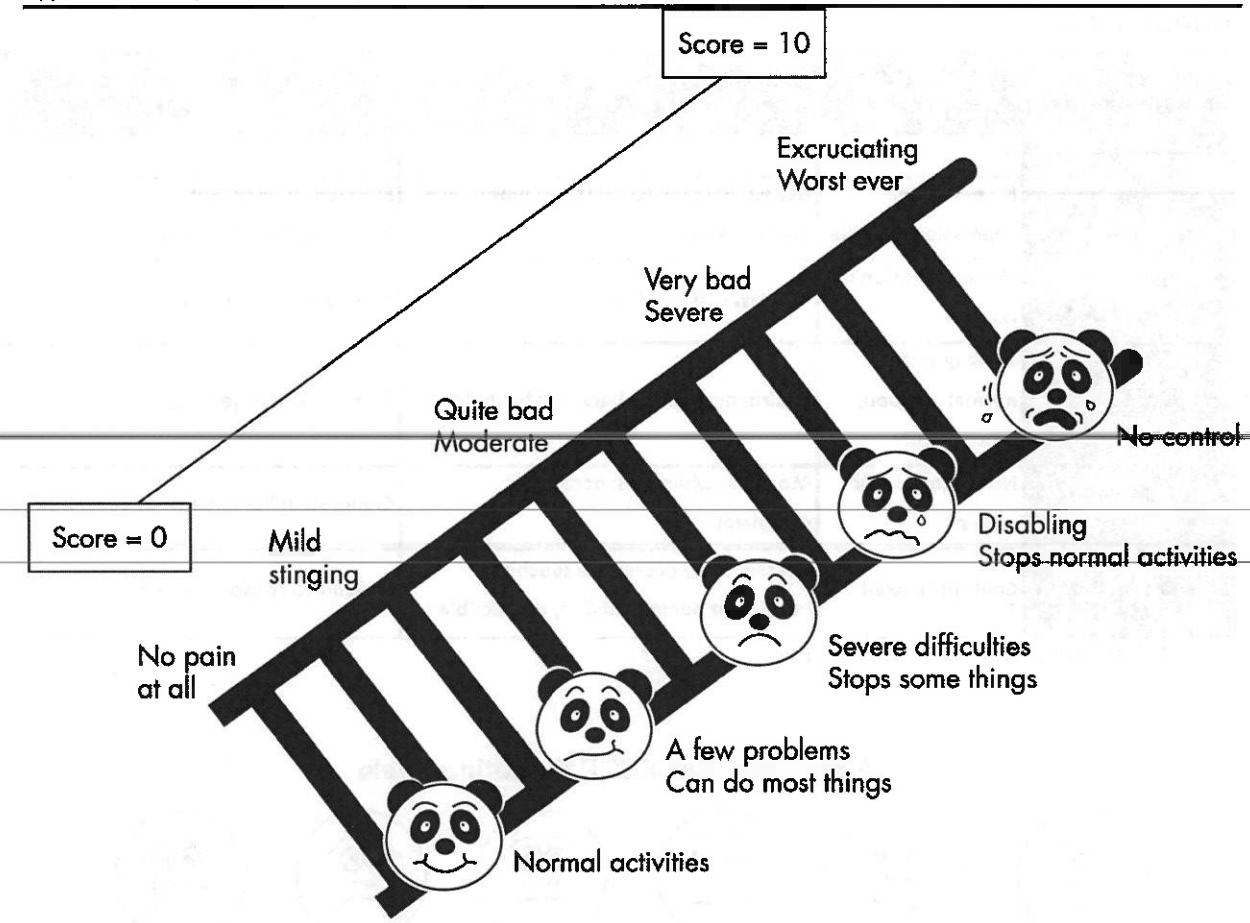

Figure 3: Modified Advanced Paediatric Life Support Pain Ladder

Pain Assessment Tools to be used – Wong Baker, FLACC, Ladder