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DIVISION OF INTEGRATED MEDICINE
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Guidelines on the Administration of Paracetamol in Children

REF NO: CH PH GE 17

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	2	July 2008	Dr Sarah Rushman	Review
	3	June 2011	Dr Sarah Rushman	Review, minor amendments
	4	July 2013	Dr H Sammons and Dr E Starkey	Guideline expanded to include all routes of administration
	5	July 2014	Dr Sammons Dr Rushman L. Taylor	Change in BNFc guidance

Intended Recipients:
Paediatric Medical and Nursing staff

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Guidelines on the Administration of Paracetamol in Children

REF NO: CH PH GE 17

The use of paracetamol is common place and routine, however there is much diversity in available routes of administration and appropriate dosing regimens which may generate confusion.

Aim and Scope

- To provide an easily accessible, understandable and comprehensive summary of paracetamol dosing by oral, rectal and intravenous routes.
- For the management of all children with pain (not limited to post-operative pain) and for children with pyrexia and discomfort.
- This policy will apply to children attending all departments of the hospital. Age banding of paracetamol doses in the BNFc can lead to over and under dosing in children who are at the top and bottom of the weight centiles. Therefore we have adopted a **weight based calculation** for all children treated with paracetamol in hospital.

Implementing the Guideline

- The successful implementation of this policy requires a multidisciplinary approach to education and training
- Teaching will be undertaken for junior medical staff and nursing staff around calculation of 24 hour dosing and review of doses after 48 hours.

Treatment of pyrexia with discomfort in children

Pyrexia itself does not need regular treatment with paracetamol. Only children that experience discomfort associated with their high temperatures should be treated.

Before administering, check when paracetamol last administered and cumulative paracetamol dose over previous 24 hours. Check front, prn and regular dosing.

Prescribing- Always write the maximum 24 hour dosage on the drug chart. Dose should be written as a prn medicine not regular.

DOSING FOR PYREXIA & DISCOMFORT

ORAL AND RECTAL DOSING

AGE	DOSAGE
Neonate 28-32 weeks postmenstrual age	10-15mg/kg every 8-12 hours as necessary. **Maximum 30mg/kg daily in divided doses**
Neonate over 32 weeks postmenstrual age	10-15mg/kg every 6-8 hours as necessary. **Maximum 60mg/kg daily in divided doses**
1-3 months	15mg/kg every 4-6 hours*. **Maximum 60mg/kg daily in divided doses**
Children < 50kg and over 3 months	15mg/kg every 4-6 hours*. **Maximum 60mg/kg daily in divided doses.**
Children > 50 kg	1g every 4-6 hours*. **Maximum 4 doses in 24 hours.**

*** Dosing intervals can be reduced to 4 hours if the total 24 hr dose is not exceeded (write max 24hr dose on drug chart)**
Rectal doses will need to be rounded down to the nearest available suppository dose available.

INTRAVENOUS

AGE	Maintenance DOSE	MAXIMUM DAILY DOSE
Preterm infant >32/40	7.5mg/kg 8 hrly	**25mg/kg/24hrs**
Neonate term – 1 month	10mg/kg 4-6 hrly	**30mg/kg/24hrs**
Children > one month and < 50kg	15mg/kg 4-6 hrly**	**60mg/kg/24hrs**
Children > 50 kg	1g 4-6hrly**	**4g/24hrs**

*** * Dosing intervals can be reduced to 4 hours if the total 24 hr dose is not exceeded (write max 24hr dose on drug chart)**

DOSING FOR PAIN / PERI OPERATIVE

Before administering, check when paracetamol ***last*** administered.

No more than 4 doses should be administered in 24hrs prior to the dose to be given.
Check front of chart, prn and regular dose prescriptions.

Prescriptions of the maximum dose of paracetamol should be reviewed after 48hrs. The higher dose may be continued for up to 5 days
(3 days if <3 months) ONLY if clinically indicated

Prescribing- **Always write the maximum 24 hour dosage on the drug chart**

ORAL

AGE	Loading Dose/Pre op dose	Maintenance DOSE	MAXIMUM DAILY DOSE
Under 3 months	20mg/kg	20mg/kg 8hrly *or* 15mg/kg 6hrly	**60mg/kg/24hrs**
Children < 50kg and over 3 months	20mg/kg (max 1 g)	15 - 20mg/kg 4-6hrly**	**75mg/kg/24hrs** ***or*** **4g/24hrs** **(whichever is *lower*)**
Children > 50 kg	1g (see below)	1g 4-6hrly**	**4g/24hrs**

** **Dosing intervals can be reduced to 4 hours if the total 24 hr dose is not exceeded (write max 24hr dose on drug chart)**

Premedication for theatre-

Individual doses of up to 30mg/kg orally (up to a max of 1.5g) may be administered to children over 14 yrs at the discretion of the consultant anaesthetist. Daily dose will need to be adjusted accordingly (max 4g in 24hrs)

RECTAL

AGE	Loading Dose/Pre-op dose	Maintenance DOSE	MAXIMUM DAILY DOSE
Neonate >32/40 and up to one month old	30mg/kg	20mg/kg 8 hrly	**60mg/kg/24hrs**
Under 3 months	30mg/kg	20mg/kg 6 hrly	**75mg/kg/24hrs**
Children > 3 months and <50kg	40mg/kg (max 1g)	15mg/kg 4-6hrly**	**75mg/kg/24hrs (Max 4 g in 24 hours)**
Children >50 kg	1g	1g 4-6 hrly**	**Max 4g in 24 hours**

** **Dosing intervals can be reduced to 4 hours if the total 24 hr dose is not exceeded (write max 24hr dose on drug chart)**

Do not use rectal analgesia in neutropenic patients

INTRAVENOUS

AGE	Maintenance DOSE	MAXIMUM DAILY DOSE
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Neonate term – 1 month	10mg/kg 4-6 hrly	**30mg/kg/day24hrs**
Children > one month and < 50kg	15mg/kg 4-6 hrly**	**60mg/kg/24hrs**
Children > 50 kg	1g 4-6hrly**	**4g/24hrs**

** **Dosing intervals can be reduced to 4 hours if the total 24 hr dose is not exceeded (write max 24hr dose on drug chart)**

IV prescriptions should be separate from oral prescriptions if <1g
For children <33kgs the 50ml vial must be used.
IV doses should be rounded to the nearest 10mg.

TTO's

Children who are being discharged home should be advised to use the dosing of paracetamol as recommended on the dosage guidance on the bottle. Children being prescribed paracetamol to take home should not be discharged on the higher pain doses of paracetamol used within this guideline for longer than a 48 hours duration. Other pain relief from the pain ladder should be prescribed if the pain is considered severe.

PRECAUTIONS

Multiple doses of paracetamol must not be administered to any child with **hepatic impairment** without prior discussion with a consultant. Single doses are the same as for healthy children.

Paracetamol toxicity and side effects (BNFc 2012-2013. See cautions)

When the maximum daily dose of paracetamol is observed it is well tolerated. The maximum daily dose is limited by the potential for hepatotoxicity which can occur following overdose (exceeding a dose of 150mg/kg). Multiple doses may lead to accumulation in children who are malnourished or dehydrated. Care needs to be taken in these children.

References

1. **British National Formulary for Children Paediatric Formulary Committee 2012-2013 bnfc.org**

2. **Association of Paediatric Anaesthetists: Good Practice in Postoperative and Procedural Pain 2nd Edition 2012**

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4. **Lonnqvist P, Morton N. Postoperative analgesia in infants and children. Br J Anaesth 2005; 95(1):59-68.**

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