European Medicines Agency
Evaluation of Medicines for Human Use

London, 23 June 2005
Doc. Ref.: EMEA/CHMP/189220/2005

ASSESSMENT OF THE PAEDIATRIC NEEDS
PAIN

DISCLAIMER

The Paediatric Working Party (PEG) is working to identify the needs in the different therapeutic areas where there should be research and development of medicinal products for children, either old (i.e. off patent) or new ones (including those under development). Products on the list are not in any order of priority.

The lists should not be viewed as a prescription tool nor as recommendations for treatment. Accuracy of data including in particular authorised doses cannot be guaranteed.

Information on existing marketing authorisations is very limited and therefore information under "authorised" includes the indication in broad term, the lower age group authorised in at least one Member State, the authorised dose(s) and formulation(s) in at least in one Member State.

Comments from third parties are expected especially to complete and/or to update the list as necessary.

AGREED BY PAEDIATRIC WORKING PARTY (PEG)	May 2005
ADOPTION BY CHMP FOR RELEASE FOR CONSULTATION	23 June 2005
END OF CONSULTATION (DEADLINE FOR COMMENTS)	31 December 2005

7 Westferry Circus, Canary Wharf, London, E14 4HB, UK
Tel: (44-20) 74 18 84 00, Fax: (44-20) 74 18 86 13
E-mail: mail@emea.eu.int http://www.emea.eu.int

MORPHINE	
Authorised indication	Severe acute and chronic pain
Authorised age group	> 6 months
Authorised dose	0.2 to 0.4 mg/kg up to 6 times daily (orally) with an initial dose of 0.2 mg/kg; 0.15 mg/kg intramuscular (im) 0.05-0.1 mg/kg intravenous (iv)
Authorised formulation	Prolonged release, granulate, capsules, oral solution, tablets, parenteral solution, suppositories
Needs[1]	Data on pharmacokinetics (PK), efficacy and safety in children < 6 months in acute and chronic severe pain Safety of long term opiate use in chronic pain in all age groups Age adapted formulations including prolonged release formulation for use in all age groups and formulations to be administered through the nasal route
FENTANYL	
Authorised indication	Induction and maintenance of anaesthesia
Authorised age group	> 2 years (*Finland*)
Authorised dose	Induction 1-3 ug/kg iv, maintenance 1-2 ug/kg/30-45 min
Authorised formulation	Sol for injection (*Austria*), transdermal patch 25ug, 12 ug, tablet for oromucosal application
Needs	Data on PK, efficacy and safety in children < 2 years Age adapted formulations including oromucosal forms and transdermal patches for use in all age groups for all Member States (MS) Data on epidural use in all age groups
S-KETAMINE	
Authorised indication	Only authorised for adults for: Use in intensive care units, emergency pain management
Authorised age group	Not authorised for children
Authorised dose	Not authorised for children
Authorised formulation	Parenteral formulation 5 mg/ml, 25 mg/ml (only authorised for adults)
Needs	Data on PK efficacy and safety in children Age adapted formulations for use in all age groups
ROPIVACAIN	
Authorised indication	Caudal and peripheral blocks (single dose)
Authorised age group	> 1 year (only single dose) (*Finland*), > 12 years repeated doses (*Finland*)
Authorised dose	2-3 mg/kg (*Finland*)
Authorised formulation	Solution 2, 5, 7.5 and 10 mg/ml (*Finland*)
Needs	Safety in long term infusions and repeated infusions, in combination with opioids, in intrathecal blocks in children
BUPIVACAIN	
Authorised indication	Lumbosacral and thoracolumbar epidural blocks, spinal block
Authorised age group	Children, age group unspecified (*Finland*)
Authorised dose	0.4-0.5 mg /kg in children <5 kg, 0.3-0.4 mg/kg in 5-15 kg, 0.25-0.30 mg/kg > 15 kg
Authorised formulation	Solution 2.5 and 5 mg/ml
Needs	Safety in long term infusions and repeated infusions, in combination with opioids

[1] The list will specify which kind of data would be needed but neither the design, nor the number of studies (e.g. PK, efficacy). The lists will indicate the need for 'age-appropriate' formulations, without specifying which one, to keep options open and room for innovation.

LEVOBUPIVACAINE	
Authorised indication	Infiltration (ilioinguinal/iliohypogastric) block
Authorised age group	Children, age group unspecified (*Finland*)
Authorised dose	1,25 mg/kg/side
Authorised formulation	Solution 0.625, 1.25 mg/ml (*Finland*)
Needs	Requires data on all indications as for bupivacaine including epidural use Safety in long term infusions and repeated infusions, in combination with opioids
TRAMADOL	
Authorised indication	Moderate and severe pain (acute?, duration not specified) (*Finland*)
Authorised age group	>1 year and >10 kg
Authorised dose	1-2 mg/kg four times a day
Authorised formulation	Oral solution, suspension, drops 100 mg/ml, effervescent tablets, capsules, solution for injection 50 mg/ml
Needs	PK, safety and efficacy in acute pain in children < 1 year Safety and efficacy in chronic moderate pain in children
DICLOFENAC	
Authorised indication	Indication related to non steroidal anti-inflammatory drugs (NSAIDs)
Authorised age group	children >1 year
Authorised dose	4-5 mg/kg (tid)
Authorised formulation	25 mg tablets authorised for children; Gastro resistant tablets, Topical gel, Granules, Film-coated tablets, Supp, Prolonged release, Solution for injection 25 mg/ml available, but not authorised for children
Needs	Age appropriate formulations for children PK, efficacy and safety data in children > 6 months, including post-operative use (e.g. tonsillectomy)
METAMIZOL	
Authorised indication	Not authorised for children,
Authorised age group	Not authorised for children
Authorised dose	Not authorised for children
Authorised formulation	Formulations authorised for adults:
Needs	Reanalysis of the benefit-risk in children based on existing data and if seems favourable, data on PK, efficacy and safety in acute moderate pain in children
CLONIDINE	
Authorised indication	Not authorised for pain in any age (*Finland*)
Authorised age group	Not authorised for pain in any age (*Finland*)
Authorised dose	Not authorised for pain in any age (*Finland*)
Authorised formulation	Injection 150 ug/ml, tablet 150 ug, rectal, epidural, patch
Needs	Age appropriate formulations for children Data on PK, efficacy and safety on acute and moderate chronic pain in children in all age ranges (?) Data on epidural use for pain in children
PARACETAMOL	
Authorised indication	Mild (severity and duration of pain not specified in some MS (*Finland*)) pain (and fever)
Authorised age group	No age limit in some MSs
Authorised dose	60 mg/kg/24h
Authorised formulation	Liquid, tablet, suppository,
Needs	Safety and efficacy data on use in preterms Efficacy and safety of loading dose

PARACETAMOL INJECTABLE	
Authorised indication	Mild pain (and fever)
Authorised age group	No age limit
Authorised dose	60 mg/kg/24h
Authorised formulation	Solution for injection
Needs	Injectable formulation of paracetamol available in all MS Safety and efficacy data on use of a loading dose
IBUPROFEN	
Authorised indication	NSAID indication
Authorised age group	> 3 months (*Finland*)
Authorised dose	20-40 mg/day (*Finland*)
Authorised formulation	Liquid, tablet, suppository
Needs	PK, safety and efficacy in < 3 months for oral route PK, safety and efficacy of parenteral formulation for pain and fever in all age groups Age adapted iv formulation
KETOPROFEN	
Authorised indication	Acute and chronic Pain (and fever) *(Finland)*
Authorised age group	> 20 kg *(Finland)*
Authorised dose	Per os, children 20-50 kg 50 mg x 2, IM: 50 mg x2 in children, no iv administration recommended in children (*Finland*)
Authorised formulation	Syrup, tablets 25 mg, capsules 50 mg, supp 100 mg, solution for injection 50 mg/ml, no iv administration recommended in children
Needs	PK, efficacy and safety in acute pain in children < 20 kg Iv formulation PK < 15 years Safety of iv infusion in children Oral formulation availability in all MS Efficacy in chronic moderate pain
NAPROXEN	
Authorised indication	NSAID related indication
Authorised age group	Children > 1 year and 10 kg (*Finland*)
Authorised dose	10 mg/kg in two doses (*Finland*)
Authorised formulation	Oral solution 25mg/ml, tablets 250 and 500 mg, supp 500 mg
Needs	PK, efficacy and safety in children < 1 year Iv formulation
UNMET MEDICAL NEEDS	

Topical anaesthetics	
Proposed indications:	Suturing of wounds etc. topical applications
Needs	Faster application time or new techniques for application needed Patch formulation suitable for children Safety in preterm newborns
Treatment of neuropatic pain in children	
Needs	No authorised treatment available for treatment of neuropatic pain for children