



IRISH MEDICINES BOARD

CODEINE*: RESTRICTED USE AS AN ANALGESIC IN CHILDREN AND ADOLESCENTS

The use of codeine for analgesia in children and adolescents under 18 has been restricted after an EU review¹. This review was triggered by reports in children who received codeine for pain control after tonsillectomy or adenoidectomy (or both), for obstructive sleep apnoea and who developed rare, but life-threatening adverse events, including death.

Codeine is converted into morphine (which is responsible for its pharmacological effects) by the cytochrome P450 enzyme *CYP2D6*. There are many genetic variations of *CYP2D6*, which affect the extent of this conversion in individuals. Different plasma morphine concentrations in patients' blood leads not only to different levels of pain relief, but also to a variable and unpredictable risk of side effects due to morphine's action on the brain and respiratory centre.

Symptoms of morphine toxicity include somnolence, reduced levels of consciousness, lack of appetite, nausea and vomiting, constipation, respiratory depression and 'pin-point' pupils.

Advice to healthcare professionals

- Although morphine-induced side effects may occur at all ages, the current evidence suggests that children under 12 years of age are at special risk of life-threatening respiratory depression with codeine. There also seems to be a particular risk in those paediatric patients who might already have compromised airways and who require pain relief following tonsillectomy and/or adenoidectomy.
- Codeine-containing medicines should only be used to treat acute, moderate pain in children older than 12 years of age, and only if it cannot be relieved by other analgesics such as paracetamol or ibuprofen, because of the risk of respiratory depression associated with codeine use.
- Codeine is now contraindicated in all patients younger than 18 years of age for pain relief following tonsillectomy and/or adenoidectomy for Obstructive Sleep Apnoea Syndrome (OSAS) due to an increased risk of developing serious and life-threatening adverse reactions including loss of consciousness and respiratory depression.
- Codeine is contraindicated in patients of any age who are known to be *CYP2D6* ultra-rapid metabolisers.

- Use of codeine is contraindicated in breastfeeding women due to an increased risk for the child if the mother is an ultra-rapid metaboliser.
- Codeine is not recommended in children with neuromuscular disorders, severe cardiac or respiratory conditions, upper respiratory or lung infections, multiple trauma or extensive surgical procedures. Symptoms of morphine toxicity may be increased in these patients.
- Codeine use for all patients should be at the lowest effective dose for the shortest period of time and the duration of treatment should be limited to 3 days. Healthcare professionals are reminded that patients may respond differently to codeine. Those caring for patients taking codeine should be advised to seek medical advice if symptoms of toxicity occur.
- The product information for codeine-containing medicines will be updated to reflect this information.

Key message

- Use of codeine is contraindicated in patients younger than 18 years of age for pain relief following tonsillectomy and/or adenoidectomy for OSAS and in those known to be *CYP2D6* ultra-rapid metabolisers.
- Codeine containing medicines should only be used in children over 12 years old to treat acute moderate pain, and only if the pain cannot be relieved by other pain killers such as paracetamol or ibuprofen alone.

Reference:

1- Restrictions on the use of codeine for pain relief in children European Medicines Agency press release 28th June 2013. Available at: http://www.ema.europa.eu/docs/en_GB/document_library/Press_release/2013/06/WC500144851.pdf

*Brands include Nurofen plus, Migraleve, Feminax, Kapake, Solpadeine. See www.imb.ie for further details.

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