

Guidance Leaflet

Management of fever in children

October 2016

Introduction

This memo sheet offers a reminder of how to manage fever in children. Aetiological management is not covered (remember that the febrile child must be fully examined for aetiological investigation [checking for a severe bacterial infection, such as purpura]).

Fever is defined as an elevation in core temperature above 38 °C, without intense physical activity, in a normally covered child, at a temperate ambient temperature.

Fever is not generally dangerous. A febrile child may present with a change in behaviour (apathy, anorexia, headache, decreased activity, etc.) which evidences, like the fever, his/her immune response. This situation may be uncomfortable and thus justifies treatment. The objective of the treatment is to reduce this discomfort and not to normalize the temperature.

Key messages

- Severity signs must be looked for: age under 3 months, difficulty breathing or elevated respiratory rate, altered consciousness, lack of response to stimulations, bulging fontanelle, pallor or cyanosis, weak cries or grunting, neck stiffness, generally leading to a transfer to a hospital emergency department.
- The family's perception should be taken into account.
- Three simple actions are preferred, in combination with pharmacological treatment: frequently offering something to drink, not covering the child too much, not increasing the temperature of the room. The following actions are not useful: cool baths or cool wraps, the effect of which is modest and transient, and which may increase the child's discomfort.
- Prescribe an antipyretic as monotherapy for the first 24 hours: paracetamol, or in case of contraindication to this, an NSAID: ibuprofen in children over 3 months of age and ketoprofen in children over 6 months of age. NSAIDs should not be used in case of chicken pox, and should be used with caution in case of bacterial infection.
- The rules for prescribing antipyretics are as follows:
 - select the first-line medication based on contraindications, warnings and precautions for use;
 - use a single substance in monotherapy for the first 24 hours.
- There is no preventive treatment for febrile seizures.
- Prescribing aspirin (acetylsalicylic acid) is not recommended in case of fever in children, due to a very rare but potentially fatal risk of Reye's syndrome.
- On its own, a poorly tolerated fever, despite proper treatment for at least 24 hours, requires medical re-assessment, which alone can judge the merits of possible substitution of the antipyretic medicine or of a combination. This delay may be shortened in infants younger than 3 months.

Taking the temperature

- There is no reason to regularly or systematically take the temperature of a child with no clinical symptoms.
- The standard method for measuring body temperature is a flexible electronic thermometer used rectally. In daily practice, some screening methods, less accurate than taking the temperature rectally, are beneficial because they avoid stress or even refusal in children over 2 years of age. The following may also be used:
 - electronic thermometer orally or axillary (which requires more time to take the temperature and has the disadvantage of frequently underestimating the temperature);
 - infrared auricular (in children over 2 years of age) or temporal thermometers, which have the advantage of a faster operating time (1 second).
- In newborns, axillary measurement of temperature is comparable to rectal measurement.

Medication management of fever in children

The antipyretic agents available in children are the following:

- Paracetamol, the recommended dosage is 60 mg/kg/day, distributed into 4 doses over 24 hours, with a minimum delay of 4 hours between two doses.

The main adverse effects of paracetamol are:

- hypersensitivity reactions, severe allergic and skin reactions, cytopenias: very rare;
- in case of overdose, hepatic cytolysis may occur.
- In case of contraindication to paracetamol, use of NSAIDs is possible. The anti-inflammatory effect remains minimal at the antipyretic and analgesic doses of these products. Ibuprofen is indicated in children over 3 months of age and ketoprofen in children over 6 months of age. Do not combine two NSAIDs.

The recommended dosage is generally:

- ibuprofen: 20 to 30 mg/kg/day in 4 doses;
- ketoprofen: 0.5 mg/kg/dose, without exceeding 2 mg/kg/day, in 3 or 4 doses.

An interval of 6 hours should generally be respected between two doses.

The main adverse effects of these NSAIDs, which can be minimized by using the lowest effective dose for the shortest duration of treatment, are:

- skin and soft tissue infections: NSAIDs should not be used in case of chicken pox, due to the risk of facilitating or worsening rare but severe bacterial infectious complications, and should always be used with caution in case of suspected bacterial infection;
- gastrointestinal adverse effects: rare but sometimes fatal cases of gastrointestinal bleeding and gastric or oesophageal ulcerations;
- renal adverse effects: rare cases of acute renal failure;
- effects on haemostasis: the reversible action of NSAIDs on blood platelets leads to a risk of prolonged bleeding time;
- others: skin allergic reactions, severe skin conditions, meningeal syndromes, bronchospasms and hyperkalaemia have also been reported.



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