

Paracetamol Syrup: A Paradigm Shift in Post-immunisation Fever Management

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Dear Editor,

The Universal Immunisation Programme (UIP) in India was launched in 1978 by the Government of India in collaboration with the World Health Organisation (WHO). The main objective of the programme is to provide free vaccination services to children and pregnant women. Over time, the programme has expanded and evolved to incorporate many vaccines against preventable diseases. Vaccines such as Diphtheria, Pertussis (whooping cough), Tetanus (DPwT), Pentavalent, Inactivated Polio Vaccine (IPV) and Pneumococcal Conjugate Vaccine (PCV) are well known for their post-vaccination fever [1].

Recommended treatment for fever following vaccination includes acetaminophen, tepid sponging, and maintaining hydration. It is also important to continue breastfeeding [1,2]. Acetaminophen is the drug of choice due to its high bioavailability, half-life of three hours and low adverse effects. Even though ibuprofen is used to treat fever in children, it is associated with an increased risk of adverse events in infants under six months of age [3]. Paracetamol should be administered at a dose of 15 mg/kg in the case of fever following vaccination, and it should never be used prophylactically. The maximum dosage is four times daily [1].

In government setting, paracetamol tablets are commonly used at immunisation sites due to their low cost and ease of handling, albeit not being the most optimal choice. However, the flexibility of dose adjustment is often low, with parents being advised to provide impossible fractions such as one-sixth or one-eighth of a fixed-dose tablet. This has often led to underdosing or overdosing of infants. Poorly crushed tablets, which can lead to accidental choking, combined with an unpleasant taste, make paracetamol tablets a poor choice.

Syrup formulation offers a significant advantage over tablet. It provides greater dosing flexibility due to its availability in various strengths (125 mg/5 mL, 250 mg/5 mL) and the inclusion of an accurate measuring cup. Aptly flavoured syrup makes it more palatable for

children, leading to less resistance. Moreover, precalculated age-specific doses of paracetamol syrup make it easier for paramedical workers to advise parents and reduce the error rate.

The use of paracetamol syrup is recommended by the Government of India's expert committee guidelines [1]. Under the National Health Mission, paracetamol syrup (125 mg/5 mL) is dispensed to all children following DPT or Pentavalent vaccination, with instructions to consume it only in the event of fever. Studies from Malaysia conclude that prescribing paracetamol should be limited to Diphtheria, Tetanus acellular Pertussis (DTaP)/Haemophilus influenzae type b (Hib)/IPV/Measles, Mumps, Rubella (MMR) [4]. The Government of the United Kingdom has developed updated dosing guidelines for paracetamol syrup to treat post-vaccination symptoms [5]. Despite recognising the need of paracetamol syrup by Ministry of Health and Family Welfare, Government of India since 2020, its utilisation remains restricted to Outpatient Department (OPD) and has yet to be incorporated into immunisation sessions [1].

In the context of managing post-immunisation fever, it is advisable for nations to consider transitioning from paracetamol tablets to the syrup formulation, primarily due to the latter's inherent advantages.

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