

No Crying Episode after DwPT- A Case of Congenital Hypothyroidism

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Most of the parenteral vaccines induce some degree of local reactions, which include pain, erythema and induration. The DwPT vaccine is the most common vaccine which is being used in India. The current schedule, as has been recommended by the National Immunization Schedule, calls for DwPT vaccine injections from 1 1/2 months to 18 months. The local reactions are more with the whole cell pertussis vaccines and the aluminium adjuvant vaccines like DwPT (Diphtheria whole cell Pertussis Tetanus). A 1½ month old male baby was brought with the complaint of not crying after getting the DwPT injection. The baby was delivered at term to nonconsanguineous parents at a Primary Health Centre (PHC). The baby had received a zero dose polio and BCG immediately after birth and DwPT and Hepatitis B at 1½ months of age at a local PHC. The mother had been told about the normal reactions like fever, irritability and redness at the injection site that the baby could develop after taking the DwPT vaccine. The mother brought the child on the next day to us with a history of not having had irritability and a crying episode in spite of having swelling and redness at the injection site, as was told to her by the health workers at the PHC. On further questioning, it was found that the baby had a history suggestive of constipation. This prompted us to think about the underlying disorder like congenital hypothyroidism. His serum TSH was high and his T3 and T4 levels were very low. The baby was started on thyroxin tablets. At the next follow up, the baby was administered a second dose of DwPT, after which he showed the normal post vaccine phenomena like crying and fever. Minor adverse effects like pain, swelling, redness at the local site, fever, fussiness, anorexia and vomiting are reported when almost half of the vaccines are administered after any of the 3 primary doses of DwPT [1]. Up to half of the children may have pain, redness or swelling at the site of the injection [2]. The local and the systemic reaction rates which are associated with DwPT are local redness

in 37.4% of the babies, pain in 51%, fever in 31.5% and fretfulness in 53.4% of the cases [3]. The thyroid hormones, T3 and T4 act as the modulators of the immune response. The immune reactions like chemotaxis, phagocytosis, cytokine synthesis and release are altered in hypothyroidism [4]. This may result in a diminished usual response to the vaccination, as it happened in our case. In the community setting, a large number of children are vaccinated at PHCs. Only very few children are vaccinated by paediatricians. The occult symptoms like a decreased activity, constipation, fever and cold to touch are likely to be neglected by the uneducated mothers, especially who are primi mothers or in early infancy, even by multipara mothers. The disorders like congenital hypothyroidism can be suspected and referred early to specialists, if the doctors and the peripheral health workers at the PHCs and the rural places are sensitized to recognize the importance of the post vaccine phenomena (DwPT), like irritability and crying. Congenital hypothyroidism is a treatable cause of mental retardation. Since we do not have routine neonatal thyroid screening programmes in our country, it is important to suspect, diagnose and treat congenital hypothyroidism at an early stage.

REFERENCES

- [1] Vijay Yewale, Panna Choudhury, Naveen Thaker. IAP committee on immunization 2009-11. In: IAP Guide Book on Immunization. *Indian Academy of Paediatrics*. 2011;61.
- [2] DPT Vaccine. In: Immunization in Practice-A practical guide for health staff. Geneva: *World Health Organization*; 2007 ;4-5.
- [3] Christopher L Cody, Larry J Baraff, James D Cherry, S Michel Marcy, Charles R Manclark. Nature and rates of adverse reactions associated with DPT and DT immunizations in infants and children. *Pediatrics*. 1981; 68(5):650-60.
- [4] De Vito P, Balducci V, Leone S, Percario Z, Mangino G, Davis PJ, et al. Nongenomic effects of thyroid hormones on the immune system cells: New targets, old players. *Steroids*. 2012 Aug;77(10):988-95.

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