

Contamination of Reconstituted Multidose Measles Vaccine Vial and Toxic Shock Syndrome in Tamilnadu

I read with interest and curiosity the Viewpoint and IAPCOI stand articles on AEFI with particular reference to measles vaccination related deaths in Tamil Nadu(1,2). I want to share my personal experience as a field investigator on similar measles vaccination deaths in Manali New town PHC (about 10 km from Chennai) way back in 1991-1992. At that time 6 children died. All of them developed high fever, diarrhea and vomiting, within 30 -60 minutes followed by septic shock typical of toxic shock syndrome. The important finding on field investigation was that the vaccine administered was pink in color. This gave me a clue. We injected *Staphylococcus aureus* from culture medium in fresh vials of OPV, DPT and measles vaccine. There was no change in OPV vials which remained pink. DTPw vials got flocculated. The reconstituted multidose measles vaccine vial turned pink from the original amber yellow color and demonstrated proliferative growth of *S. aureus*. We submitted our findings to the state government, but were restrained from publishing this information. However, instructions were given to health authorities and health workers to discard any measles vaccine vial which turns pink in color. I do not think that the color of the measles vaccine was ascertained in the Thiruvellore tragedy perhaps since everybody thought that the deaths were due to anaphylaxis even though epidemiologists will not agree to the occurrence of anaphylaxis in cluster. Probably, this tragedy was due only to human error and a muscle relaxant might have been inadvertently used as a diluent.

As a National Trainer for 18 years since EPI launch in 1978, I was involved in field surveys and training of staff of PHC, taluk and district hospitals under UIP and CSSM programs till 1996 when I retired. Those were the golden years where training and supervision at all levels was "state of art". After introduction of RCH1 in 1997 the hitherto WHO/ UNICEF sponsored National training programs were decentralized and the responsibility was entrusted to the respective state governments. Unfortunately the quality of training as well as supervision gradually dwindled. The result is what we saw at Thiruvellore since the health worker did not follow the simple rule of observing the vaccinated child for at least for a minimum of 30-60 minutes following immunization and did not have emergency kit containing adrenaline and ambu bag etc though she carried the vaccines in a vaccine carrier and reconstituted the lyophilized measles vaccine with recommended diluent(?).

Since immunization is a global operation, a WHO team should investigate such vaccine deaths occurring in their member nations to find out the actual cause of death instead of the vaccine manufacturers and the central and state government machinery. There are so many ifs and buts that remain unanswered in the Thiruvellore tragedy.

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