INVITED COMMENTARY

Do We Need To Roll Back Universal Vitamin A Supplementation In India?

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Vitamin A deficiency (VAD) has long been recognized as a common child health problem with a wide range of clinical manifestations from night blindness to severe keratomalacia and blindness. Vitamin A supplementation (VAS) has been closely linked with a reduction in all-cause child mortality by as much as 24% [1,2], suggesting survival benefits in VAD countries. World Health Organization advocated VAS in children aged 6 months to 5 years for settings where VAD is a public health problem with >20% VAD prevalence [3]. The Government of India launched the National Prophylaxis Programme against Nutritional Blindness due to VAD in 1970, targeting children aged 1-6 years with the specific aim of preventing nutritional blindness due to keratomalacia. Survival benefit with VAS was considered relevant to India, and in 2006, the target age group for universal vitamin A supplementation (UVAS) was extended to children aged 6 to 59 months.

In India, some studies showed variable results for under-five mortality reduction with VAS [4] but a Cochrane review in 2017 [5] reiterated that VAS is associated with a clinically meaningful reduction in mortality amongst children aged 6 months to 5 years. Thomas, et al. [6] re-estimated the pooled risk ratio for mortality reduction with universal VAS from Indian studies, and did not find any survival benefit. The results projected by Thomas, et al. [6] should not come as a surprise because right from the beginning it was understood that VAD is not a proximal determinant of death in children in developing countries because they primarily died from infections such as diarrhea, respiratory disease, and measles [7]. VAD presumably alters the incidence, duration, or severity of such infections or the child's ability to withstand their consequences [8]. With effective interventions that reduce the incidence of these infections, the net impact of UVAS on under-five mortality is also expected to be reduced over time.

Thomas, et al. [6] have used a robust methodology while performing the meta-analysis of five Indian trials. However, in order to draw meaningful inferences for making programmatic decisions, there is a need for absolute clarity about the data used for such analysis. Of the five studies, one included only infants, and two trials used a placebo and one 'usual care' for the control groups. The uncertainty of the control group getting or not getting any VAS through the existing health delivery system is an important issue to think about. If they did get, which can be the case in most situations, it makes the cases and controls not so different to draw any conclusions about mortality. One of the trials [4] has acknowledged that some non-trial VAS might have occurred during the study but in such a situation the comparison is between routine versus occasional VAS, which is not a compelling explana-tion to draw conclusions about the survival benefit of VAS.

It is expected that science should inform policy and programs. This study has rightly suggested a targeted VAS approach for the states where the prevalence of VAD is >20% and those with a borderline prevalence of VAD with higher mortality rates. Programmatically, it appears to be an important approach because these states continue to have a high prevalence of VAD despite universal VAS being administered to under-five children for decades. The authors have further suggested surveillance in the other states with VAD prevalence <20%, where VAS can be rolled back. It is this suggestion that needs to be examined programmatically. Firstly, the VAD prevalence estimated by the Comprehensive National Nutrition Survey (CNNS) in 2016-2018 [9] has been conducted in a population getting VAS for decades and if in a majority of states VAD prevalence is <20% it can be interpreted as a partial success of the program. Therefore, one needs to ponder about the possible magnitude of VAD prevalence in these apparently 'better off' states if UVAS was not administered under existing health programs. It needs to be kept in mind that even with UVAS administered for decades, VAD has been reported among 18% of pre-school children in India and the majority of states have VAD prevalence >10% [9]. In this scenario, thinking about rolling back of VAS, particularly when there is no remarkable improvement in dietary intake of vitamin A in

these states over the years, sounds alarming. It is also known that VAD of public health magnitude does exist in clusters or isolated geographical pockets even in 'better off' states because of issues related to poor food availability and food insecurity. How to reach this vulnerable population if VAS is rolled back, and where do we go from here?

Surveillance alone for VAD in the states with VAD prevalence <20% may not make us any wiser to make a decision about the future implementation of the VAS program in India. There is an urgent need to undertake mapping of geographical areas of VAD at the district level and lower down, instead of relying on state averages, in order to know the actual magnitude of VAD within the state. Studies with different doses, strategies, and delivery mechanisms need to be conducted to identify the best alternative to the current VAS program before contemplating rolling back the VAS initiatives in India.

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