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Prophylactic Vitamin D Supplementation Practices for Infants: A Survey of Pediatricians From Delhi

This survey was conducted among 125 pediatricians working in public and private child care facilities of Delhi. Prescription rates of routine vitamin D supplementation varied between 70-100% for various groups of infants, despite non-availability of government guidelines. Pediatricians in private practice more frequently prescribed vitamin D supplementation to term healthy infants as compared to government pediatrician (91.4% vs 71.6%; $P=0.005$).

Keywords: Guidelines, Hypovitaminosis D, Prescription, Rickets.

The global pandemic of Vitamin D deficiency is equally affecting Indian term-born, healthy and exclusively breastfed infants [1,2-5]. Various global associations and Indian Academy of Pediatrics (IAP) recommend daily supplementation of 400 IU to all infants [6-8]. We conducted this study to document the prescription practices of pediatricians in Delhi regarding prophylactic vitamin D supplementation at birth.

This cross-sectional survey was conducted among 125 pediatricians from selected public and private healthcare facilities in Delhi between December, 2017 and

February, 2018. A structured questionnaire was administered to a convenience sample of all available pediatricians with either Doctor of Medicine (MD) or Diploma (DCH) in pediatrics qualifications, and having more than six months of experience, stationed in the out-patient department of Medical colleges and associated hospitals, Delhi Government hospitals, Corporate hospitals, Private hospital / Nursing Home / Trust or Non-Government Organization - funded hospitals on the day of visit, and Private clinics of Delhi.

From 67 healthcare facilities located all over Delhi, we enrolled 125 pediatricians; 102 (81.6%) were working in hospitals while rest were practicing in the clinics. Pediatricians from public and private facilities were comparable for their gender, postgraduate qualification, and awareness of IAP guidelines for vitamin D supplementation. A higher number of participants from private sector had been practicing for more than 10 years ($P<0.001$).

The overall prescription rates for routine supplementation at birth were 80.8%, 94.4%, and 97.6% for term appropriate for gestational age (AGA), term low birthweight (LBW), and preterm infants, respectively. Routine supplementation to term healthy (AGA) infants was prescribed more often by those working in private set-up (53/58, 91.4%) as compared to pediatricians working in government facilities (48/67, 71.6%) ($P=0.005$). All pediatricians in private practice were prescribing vitamin D to term born LBW infants.

Primary source of information on prophylactic vitamin D supplementation for the participants was IAP guidelines (25.6%), followed by pediatric textbooks (23.2%) and American Academy of Pediatrics guidelines (19.2%). One participant cited advertisement made by pharmaceutical representative as his source of information; 7.2% government pediatricians cited the non-availability of vitamin D drops for infants in their hospital supplies, and one participant cited lack of government guidelines on prophylactic vitamin D supplementation as the reasons for non-supplementation.

Lower prescription rates in government sector could be attributed to non-availability of the drug and lack of a government/hospital policy. The Essential drug list of Delhi (2013) or National list of essential medicines (2015) of India do not have vitamin D formulations for infants. Further, there are no government guidelines on vitamin D supplementation to infants in India. Yet our study found 70-90% pediatricians in Delhi were prescribing routine vitamin D supplements to infants. This may be ascribed to either professional society recommendations or marketing by pharmaceuticals. This is in contrast to poor prescription practices for zinc (recommended by IAP, UNICEF, and Government of India) for supplementation during an episode of diarrhea. National Family Health Survey 4 (2015-16) for Delhi reports that only 25.3% under-five children receive zinc during a diarrheal illness, whereas another study reported that only 61.1% of private practitioners in Gujarat were prescribing zinc supplementation in an episode of diarrhea [9,10]. Could this be because marketing revenues from zinc are not as lucrative as from vitamin D?

This study, first of its kind from India, used a sample of convenience, restricting its generalizability. Moreover, physical verification of prescriptions was not performed, and compliance to the prescriptions was also not examined. In a country like India, where food fortification with vitamin D is limited and scope of sun exposure for adequate endogenous formation of vitamin D has remained unexplored, supplementation as a strategy needs to be clearly stated.

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