Pediatric human immunodeficiency virus infection presenting as symptomatic hypocalcemia

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Abstract

Mother to child transmission still accounts for thousands of children being affected with human immunodeficiency virus (HIV) yearly. These children are often detected late in their disease course, most commonly presenting as protein energy malnutrition. Here we present a unique pediatric case who presented with severe symptomatic hypocalcemia. The case highlights the importance of vitamin D and calcium screening in this subgroup of HIV patients.

Key words: Child, human immunodeficiency virus, hypocalcemia

Introduction

Each year about 15,000 children are infected with human immunodeficiency virus (HIV) in India.[1] Several social and psychological factors add to the delay in the diagnosis of the disease in this subgroup. Mother-to-child transmission is the predominant route of HIV infection in children. Initiation of antiretroviral treatment (ART) in the antenatal period markedly decreases the risk of transmission in children. However, only 52.7% of pregnancies receive health-care facilities[2] and only a fraction of them receives HIV counseling and testing. Hence, a significant number of pediatric HIV cases miss the opportunity of diagnosis in infancy.

A study done in India on the late presentation of pediatric HIV stated the mean age of delayed presentation of moderate-to-severe disease was 4 years.[3] Protein–energy malnutrition was reported as the most common clinical presentation among these children.[4]

Here, we present a unique HIV-infected child who presented for the first time at 8 years of age with carpopedal spasms.

Case Report

An 8-year-old girl presented to emergency with the complaint of recurrent painful spasms of both upper and lower limbs for the last 1½ months. The episodes were self-limited, but the last episode persisted for 4 h so the attendant brought her to the emergency. There was no history of fever, cough, loss of consciousness, uprolling of eyes, bladder–bowel involvement, vomiting, loose motions, and no prior history of admission or blood transfusion. The attendant who initially identified herself as the mother told that the child had never been admitted before but the child's appetite had been low for the last 6 months. Her father had died of pulmonary tuberculosis about 6 years back. Her perinatal and developmental history was uneventful and immunization was also appropriate for her age. On examination, the child was anxious and irritable, she had typical carpopedal spasms, pallor, generalized lymphadenopathy, and mild hepatosplenomegaly. The patient had weight of 16 kg, height was 108 cm; both were below the 3rd percentile for age. Her complete blood count revealed Hb of 6 g/dl, mean corpuscular volume of 72.1fL, total leukocyte count was 16.58 thousand/ml; with 86.2% neutrophils, 9.7% lymphocytes, and platelet count was 2.42 lacs/ml. The peripheral blood smear revealed normocytic normochromic anemia, serum ferritin was within normal limits. Her renal function tests (serum urea: 20 mg/dl and serum creatinine: 0.79 mg/dl) and urinary examination were within normal limits; liver function tests were also normal; (Serum Glutamic Oxaloacetic Transaminase (SGOT) 34U/L, serum glutamate pyruvate transaminase (SGPT) 22U/L, total protein 6.8 gm/L, and albumin 4.0 g/dl). Her serum total calcium was low (6.4 mg/dL); serum phosphorus was low (2.2 mg/dl), serum parathormone level was raised (120.2 pg/ml), serum alkaline phosphatase was within normal limits 173 U/L, and serum Vitamin D level was 20 ng/ml (insufficient). The presence of growth retardation, anemia, and hepatosplenomegaly prompted us to investigate further for chronic diseases. Her chest X-ray was normal and cartridge-based nucleic acid amplification test of induced sputum was also negative for *Mycobacterium tuberculosis*. Her enzyme-linked immunosorbent assay for HIV was planned due to strong suspicion of chronic infection which came out to be positive. She was given injectable calcium gluconate for 4 days and then shifted to oral calcium. Her anemia was managed with packed red blood cells. Later, her attendant revealed that her mother had died of unknown causes about 4 years back. She was started on ART and oral calcium and discharged on the same. On follow-up at 2 months, the child was thriving well.

Discussion

Although uncommon, hypocalcemia has been documented in HIV-positive patients, mostly adults. There has not been any study on the prevalence of hypocalcemia in pediatric HIV cases. Vitamin D deficiency has been attributed as the most common cause of hypocalcemia in these patients.[5] Other known causes of hypocalcemia in HIV are hypoalbuminemia, medications such as foscarnet, and Fanconi syndrome related to antiretroviral drugs.[6] Acquired hypoparathyroidism causing symptomatic hypocalcemia has also been documented in people living with HIV.

There is no mention in the literature of any HIV patient presenting for the first time with symptomatic hypocalcemic tetany, this makes our case unique and interesting. Our patient was not exposed to any drug causing hypocalcemia, we also ruled out other possibilities such as Fanconi syndrome, hypoparathyroidism, and leaving Vitamin D insufficiency as the sole cause of her hypocalcemia. Vitamin D deficiency is recently being recognized as a rapidly emerging problem of global importance. The prevalence in Indian children has been reported to be from 14% to 24%.[7] The recent recommendations have not mentioned routine Vitamin D supplementation in chronic infections such as HIV.[7,8]

Our case report highlights the importance of Vitamin D status screening in children living with HIV/AIDS.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Access this article online

Quick Response Code:

Website: www.ijstd.org

DOI: 10.4103/ijstd.ijstd_16_23

How to cite this article: Shambhavi, Nikita, Shankar A. Pediatric human immunodeficiency virus infection presenting as symptomatic hypocalcemia. Indian J Sex Transm Dis 2023;44:167-9.

Submitted: 11-Feb-2023 **Revised:** 21-Mar-2023
Accepted: 21-Mar-2023 **Published:** 06-Dec-2023

Financial support and sponsorship
Nil.

Conflicts of interest
There are no conflicts of interest.

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