

Severe Hypercalcemia Following Vitamin D Exposure in Infants, Underestimated Risk Associated with Supplement Use

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Abstract- According to medical guidelines, newborns are often given vitamin D supplements. However, an overdose of diet D can result in life-threatening hypercalcemia.

The article describes the case of a 3-month-vintage toddler who suffered from excessive hypercalcemia. After mother and father had been requested for clarification, an blunders withinside the use of diet D became discovered.

The mother and father surely observed the midwives' advice. They changed the prescribed diet D with a complement of various power and dosage with out the want for dose conversion. In fact, there are numerous medicinal drugs and dietary supplements that include nutrition D and feature one-of-a-kind concentrations and measurements. This case highlights the important thing function of healing training. Overall, harmonization of the rules and labeling of nutritional dietary supplements and drugs containing nutrition D is necessary.

Keywords: diet D, overdose, intoxication, nutritional supplement, hypercalcemia, pharmacovigilance, misuse, case report.



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I. INTRODUCTION

Vitamin D is a fat-soluble hormone this is synthesized endogenously or from outside reassets of vitamins. Vitamin D has pleiotropic functions (1, 2), particularly associated with calcium-phosphorus and key bone homeostasis withinside the newborn (3). The French Agency for Food, Environment, Health and Food Safety at Work (ANSES) (4) And the European Food Safety Authority (EFSA) have revised the nutritional recommendations for diet D. As Adequate Intake (AI) for Newborns < 6 months is equal to ten mcg or four hundred IU in keeping with day. In this context, in step with the recommendations, nutrition D supplementation in newborns ought to be commenced systematically below clinical supervision (5). The Institute of Medicine (IOM) and EFSA have also established age-specific tolerable upper limits (ULs) for vitamin D (6, 7), although the threshold for acute toxicity is still unclear (3). Taking into consideration the threat of boom retardation and hypercalcemia, the UL of diet D for children is < 6 months corresponds to 25 mcg or 1000 IU per day (4, 7, 8). We gift a case of nutrition D overdose in a baby due to flawed substitute of a nutritional complement with a prescribed nutritional complement.

II. CASE DESCRIPTION

In August 2020, a 3-month-antique woman became admitted to the ward for five days of amenorrhea. She was born at term and weighs 2.3 kg. At the time of admission, the new child weighed 4.5 kg. The blood pressure was then redetermined several times. The clinical examination went without exception, with the

exception of a general examination < 20 mmol/L for a kaliuresis of 33 mmol/L, indicating that all lumbar puncture results were negative. The puncture was performed because the newborn had generalized hypotonia and severe behavioral changes, and an abdominal ultrasound scan confirmed three days later, which was absent after hospitalization, revealed bladder deposits that were considered clinically insignificant. three days later, no inflammatory syndrome or micro organism within the method and intravenous fluids. The first serum calcium determination was made 12 days after hospital admission and was 3.08 mmol/L (normal range: 2.15-2.2).55 mmol/L) with a serum albumin of 41 g/L (normal values: 18 to 88 ng/L), while calcidiol was above the upper limit of quantification (normal values: 30 to 400 ng/ml) and calcitriol was 200 pg/ml. (Normal value $<$ phosphate turned into 1.eight mmol/L (regular values: 1.6-2.4) Serum creatinine changed into 23 μ mol/L (regular values: 15-37 μ mol/L), whilst urea changed into 2.three mmol/L (regular values : 1.three mmol/L).8-6. 4 Urinary calcium level was 2.75 mmol/L and creatin Uria turned into 1 mmol/L. With a attention of one mmol/l.The electrocardiogram was normal and there were no arrhythmias. The infant was hydrated and the serum calcium level gradually decreased and reached 2. seventy eight mmol/L, carefully tracking the encouraged serum calcium level. At follow-up weeks later, serum calcium degree became 2.6 mmol/L and clinical signs were asymptomatic. A kidney ultrasound scan revealed a vitamin D overdose. Recommended daily dose for breastfed newborns. The maternity staff initially prescribed 4-5 drops per day of a brand-name drug containing cholecalciferol at a dose of 10,000 international units (IU)/mL, one drop of which contained 300 IU of vitamin D (9). At home, the caring midwife suggests that parents replace the originally prescribed vitamin D supplement with so-called "natural" vitamin D medications, including vitamin D, which may contain endocrine disruptors, as well as preservatives, believing that "natural Vitamin D ", the midwife suggested to the parents several DS available on the Internet to maintain the "same dose" as the one originally prescribed. Next, my parents purchased the brand DS Sunday D3 10,000 IU (+ Vitamin K2) online. It is assumed to comprise 10,000 IU consistent with drop (now no longer consistent with ml), and the manufacturer's advice is one drop each 10 days. each 10 days. However, as at first encouraged for ZymaD, 4-five drops have been administered over days.

The newborn was exposed to a dose between 40,000 and 50,000 IU per day, representing exposure due to severe symptomatic vitamin D overdose with 15 days of hospitalization and possible sequelae.

III.DISCUSSION

This case highlights the key role of healthcare professionals in reducing the risk of inappropriate use of medicines and dietary supplements, even in certain areas, as the blurred line between recommended use and potentially dangerous errors can lead to serious health risks. Given the current advertising campaign on vitamin D, there is a suspicion of a vitamin D overdose in the presence of hypercalcemia. The child likely developed severe symptomatic hypercalcemia related to the hospitalization. Week hospital stay. Avoid diagnostic delays and unwarranted testing. Vitamin D poisoning in newborns Acute calcitriol poisoning simplest lasts some days because of its quick half-life. As a transport-binding protein, its half-life in the circulation is between 2 and 3. Calcidiol poisoning can therefore last for months. Vitamin D poisoning has been mentioned in sufferers who took excessive doses of diet D dietary supplements voluntarily or because of medicinal drug or complement errors. Packaging and system of nutritional supplements, ensuing in prescription or management errors (11, 13, 16, 17).

After an error in administering the drug. Therapeutic vitamin D via supplement with varying levels of risk is further increased through a variety of alternative and expressive dosages. Vitamin D is available in France, not forgetting the DS and The labeling of products containing vitamin D (medicines and food supplements) suffers from a lack of harmonization, which deceives the consumer and exposes him to danger.

Additionally, due to their classification as drugs, products containing vitamin D are subject to two different regulations, allowing the manufacturer to include a dietary supplement in their DS, thereby perpetuating confusion with equivalent drugs. However, it is believed that the vitamin D content of unapproved DS is rarely suspicious compared to these products, which are considered harmless and healthy, although it is believed to increase in drugs with marketing authorization. In fact, the use of DS is partly due to the presence of excipients in drugs with antioxidant properties, such as: B. Butylhydroxytoluene (BHT), which are considered harmful by parents. Regardless, some medications are at risk of error when dispensing or administering medication.

Mother and child each have their own activities or presentations (e.g., vitamin D, vaccinations), which exposes them to potential errors. her child. Our case highlights the risk of vitamin D overdose, the effects of vitamin D, and the hype elsewhere. This could lead to more and more patients taking vitamin D. Reports of vitamin D poisoning have been published, providing another source of preventable errors since most cases of vitamin D poisoning can be easily corrected. Regardless of the medication used, patients should use the appropriate dosage. Vitamin D intoxication, early assessment of serum calcium to recommend vitamin D-containing drugs in relation to regulatory recommendations, dosage and dietary supplement use recommendations. Dietary supplements.

DATA AVAILABILITY STATEMENT

The original contributions presented in the study are included in the article/**Supplementary Material**, further inquiries can be directed to the corresponding author/s.

AUTHOR CONTRIBUTIONS

All authors listed have made a substantial, direct, and intellectual contribution to the work and approved it for publication.

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