some patients there may be initial diarrhea but this settles on its own. Care must be taken to recognize and treat hypoglycemia including the use of 0.5-1 mg glucagon injection for emergency use if unable to take oral carbohydrate. The physician should see the patient every week, and be accessible by phone during the transfer.

We emphasize the need for medical practitioners to consider molecular testing for all patients who present with diabetes below 6 months of age as this will facilitate accurate diagnosis and appropriate therapy.

IPS KOCHAR AND *RADHIKA JINDAL
*From the Departments of Pediatrics and Adolescent Endocrinology, and *Endocrinology, Indraprastha Apollo Hospital, New Delhi, India.*
inderpal_kochar@yahoo.com

REFERENCES

1. Flanagan SE, Edghill EL, Gloyn AL, Ellard S, Hattersley AT. Mutations in KCNJ11, which encodes Kir6.2, are a common cause of diabetes diagnosed in the first 6 months of life, with the phenotype determined by genotype. Diabetologia. 2006;49:1190-7.
2. Rafiq M, Flanagan SE, Patch AM, Shields BM, Ellard S, Hattersley AT. Effective treatment with oral sulfonylurea in patients with diabetes due to sulfonylurea receptor 1 (SUR1) mutations. Diabetes Care. 2008;31:204-9.

Vitamin D Intoxication: Too Much of a Good Thing!

Vitamin D deficiency is common among Indian children [1]. The recommended therapy for vitamin D deficiency rickets is 1,00,000–6,00,000 IU [2]. The increasing awareness about beneficial effects of vitamin D has led to an increase in its prescription [3]. However, one needs to be cautious while prescribing vitamin D, as overdose can lead to severe hypercalcemia.

We present the case of an 18-month-old girl, referred with lethargy and vomiting for 10 days, and polyuria for 5 days. She was noticed to have bowing of legs 3 months ago, and diagnosed to have rickets. Her 25-hydroxy D_3 level was 37.5 nmol/L (normal: 75-250 nmol/L). She was started on oral calcium and cholecalciferol 60,000 IU per day, for 6 weeks. In follow-up, the prescription was repeated for another 6 weeks. Meanwhile, the parents consulted another practitioner for the 'persistent' bowing, who administered 6 lakh IU vitamin D3 intramuscularly. The cumulative dose of vitamin D received by her was nearly ten times the therapeutic dose.

At presentation, the child was irritable and dehydrated, with BP of 136/94. Serum ionized calcium was 2.83 mmol/L, total calcium 20 mg/dL (normal: 9-11 mg/dL), phosphate 2.63 mg/dL (normal 2.5-4.5 mg/dL), alkaline phosphatase 513 IU/ L (normal 240-840 IU/L), 25-hydroxy D_3 > 3500 nmol/L and parathormone level 23.48 pg/mL. Renal and liver function tests were normal. Urinary calcium/creatinine ratio was 2 (normal <0.2). Ultrasonography of kidneys and CECT brain was normal. Wrist skiagram showed healed rickets. She was started on intravenous fluids (1.5 times maintenance), furosemide and hydrocortisone. Injection Calcitonin was added on 2nd day, in view of persistent hypercalcemia. Ionized calcium fell to1.56 mmol/L initially, followed by rebound increase 48 hours later. For control of hypertension, child required amlodipine and enalapril. Child was discharged after 12 days with serum calcium 13 mg/dl and BP 106/70, on tapering doses of oral prednisolone, furosemide and anti-hypertensives.

Furosemide and enalapril were stopped after 3 weeks, whereas amlodipine was continued for 6 months in view of persistent hypertension. The serial serum Calcium was 10.5, 10.8 and 10.6 mg/dL, phosphate was 2.4, 5.1 and 5.6 mg/ dL, 25-hydroxy D3 was 3446, 3484 and 1785 nmol/L, and Parathormone was 16, 14.9 and 25 pg/mL at 2, 4 and 12 weeks after discharge. Ultrasonography at 3 and 6 months did not reveal nephrocalcinosis.

The manifestations of vitamin D intoxication are related to hypercalcemia, and require prompt treatment. Since vitamin D is stored in fatty tissues, the toxicity may last for up to 6-8 months. Calcium induced hypercatecholaminemia, and direct effect on vascular smooth muscle are responsible for hypertension [4]. Treatment modalities include diet with low calcium and phosphorus, hydration, loop diuretics, glucocorticoids, calcitonin and bisphosphonates [5]. Hemodialysis is useful in life Threatening hypercalcemia.

Before starting vitamin D for children with rickets, parents should be asked about previous vitamin D administration. In case of doubt regarding either the diagnosis of vitamin D deficiency, or previous intake of vitamin D, it is prudent to check 25-hydroxy vitamin D levels. Parents should also be counseled that bowing of legs would take time to resolve and does not require repeated courses of vitamin D. Vitamin D needs to be used with caution, and only when indicated, to avoid adverse effects.

Meenakshi Bothra and Vandana Jain
Division of Pediatric Endocrinology,
Department of Pediatrics,
All India Institute of Medical Sciences, Ansari Nagar,
New Delhi, India,
drvandanajain@gmail.com

REFERENCES

1. Jain V, Gupta N, Kalaivani M, Jain A, Sinha A, Agarwal R. Vitamin D deficiency in healthy breastfed term infants at 3 months and their mothers in India: Seasonal variation and determinants. Indian J Med Res. 2011;133:267-73.
2. Misra M, Pacaud D, Petryk A, Collett-Solberg PF, Kappy M. Vitamin D deficiency in children and its management: Review of current pediatrics knowledge and recommendations. Pediatrics. 2008;122;398-417.
3. Autier P, Gandini S. Vitamin D supplementation and total mortality: a meta-analysis of randomized controlled trials. Arch Intern Med. 2007;167:1730-7.
4. Eiam-Ong S, Eiam-Ong S, Punsin P, Sitprija V, Chaiyabutr N. Acute hypercalcemia-induced hypertension: the roles of calcium channel and alpha-1 adrenergic receptor. J Med Assoc Thai. 2004;87:410-8.
5. Barrueto F, Wang-Flores HH, Howland MA, Hoffman RS, Nelson LS. Acute vitamin D intoxication in a child. Pediatrics. 2005;116:e453–e6.

Gemcitabine Induced Skin Rash

Gemcitabine is used in various carcinomas like lung cancer, pancreatic cancer, bladder cancer and breast cancer in adults. It is considered to be a well-tolerated drug with little known side effects [1]. The reported toxic effects of gemcitabine include myelosuppression, altered liver function tests, flu–like syndrome, bronchospasm, rash, itching, and fever [2]. Skin reactions are rarely reported [1-4], the reported incidence being 7%–30% [4].

Gemcitabine has not been frequently used in pediatric malignancies and to our knowledge there is only one paper describing skin rash in children with the use of gemcitabine [5]. A 8-year-old boy was admitted in our hospital because of fever and multiple swellings on both sides of his neck in March 2012. On examination, multiple bilateral cervical lymph nodes were palpable. Abdominal examination showed hepatosplenomegaly and rest of the systemic examination was normal. Biopsy of cervical lymph node suggested Hodgkin's disease. Diagnosed as stage III B Hodgkin's disease, he was treated with adriamycin, bleomycin, vinblastine and dacarbazine (ABVD) based chemotherapy. Re-evaluation following 4 cycles of chemotherapy revealed progressive disease, so patient was put on ifosfamide, gemcitabine, vinorelbine and prednisolone (IGV) based chemotherapy. Gemcitabine 800 mg/m^2 was given on days 1 and 4, vinorelbine 20/m^2 mg on day 1, ifosfamide 2000 mg/m^2 on day 1 to 4 and Prednisolone 2mg/kg from Day 1 to 4 of each 21-day cycle. On Day 3 of treatment child developed a maculopapular, itchy skin rash. The rashes involved the neck, chest, back, upper arms and abdominal wall. It subsided in severity within 4-5 days with the use of oral antihistamine. However, it reappeared again on day 5 on repeat challenge with gemcitabine during second cycle of chemotherapy. The skin lesions were again easily managed with oral antihistamines.

The other drugs being used in this child also cause skin rash and the possibility of this reaction due to them, or additive effect of all the drugs cannot be ruled out. Dermatologic side effects of vinorelbine including alopecia (12%), rash (<5%), pruritus, blister formation, skin sloughing, and urticaria have been reported and with ifosfamide, even rare (affect between 1 in 1000 and 1 in 10,000 people) includes rash and dermatitis. The causal relationship of gemcitabine treatment with skin reaction is probable in our case according to the Naranjo probability scale.

VIKAS DUA AND *HARI GOYAL
Department of Pediatric Hematology Oncology and
**Medical Oncology, Action Cancer Hospital, Delhi, India.*
drvikasdua@yahoo.com

REFERENCES

1. Imen A, Amal K, Ines Z, Sameh el F, Fethi el M, Habib G. Bullous dermatosis associated with gemcitabine therapy for non-small-cell lung carcinoma. Respir Med. 2006;100:1463-5.
2. Kuku I, Kaya E, Sevinc A, Aydogdu I. Gemcitabine-induced erysipeloid skin lesions in a patient with malignant mesothelioma. J Eur Acad Dermatol Venereol. 2002; 16:271-2.
3. Chen YM, Liu JM, Tsai CM, Whang-Peng J, Perng RP. Maculopapular rashes secondary to gemcitabine injection for non-small-cell lung cancer. J Clin Oncol. 1996;14: 1743-4.
4. Kanai M, Matsumoto S, Nishimura T, Matsumura Y, Hatano E, Mori A, *et al*. Premedication with 20 mg dexamethasone effectively prevents relapse of extensive skin rash associated with gemcitabine monotherapy. Ann Oncol. 2010; 21:189-90.
5. Reid JM, Qu W, Safgren SL, Ames MM, Krailo MD, Seibel NL, *et al*. Phase I trial and pharmacokinetics of gemcitabine in children with advanced solid tumors. J Clin Oncol. 2004;22:2445-51.