Successful Treatment of Severe Atopic Dermatitis with Calcitriol and Paricalcitol in an 8-Year-Old

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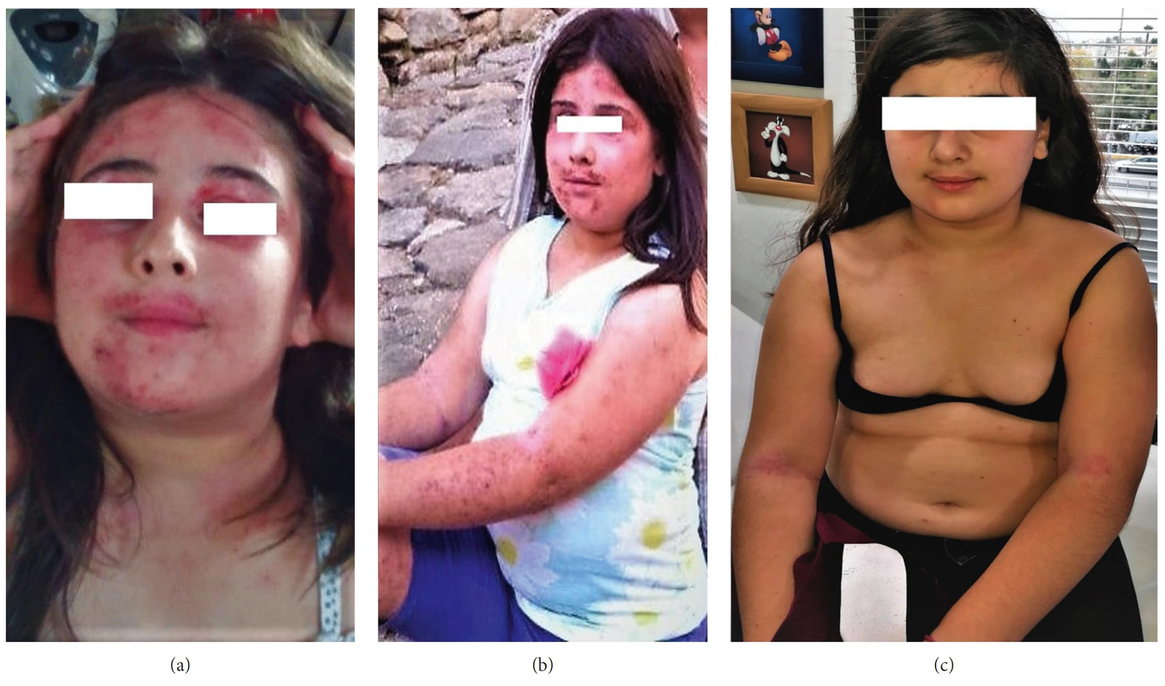
Background

- Atopic dermatitis (AD) is a chronic inflammatory skin disease that usually affects children and adolescent.
- Traditional treatment options include emollients locally and immune modulatory agents systemically.
- Vitamin D supplementation has already been linked either with a decreased risk of AD development or with significant clinical improvement.

Case presentation

- An overweight 8 year old girl was referred for investigation of increased TSH and Cushingoid characteristics under oral prednisolone treatment for the management of her AD.
- AD was uncontrolled, with whole body lesions (SCORAD 70), intense itching and consequently sleep disturbances as well as severe psychological consequences.
- All the established AD therapeutic strategies were performed previously and failed to control the disease.



(a) (b) (c)

FIGURE 1: (a) First presentation, before calcitriol therapy; (b) at 2 months already healing; (c) at 3 years after the first presentation, currently in paricalcitol therapy, with minimal lesions.

Under adequate supplementation with cholecalciferol the patient was treated with calcitriol and subsequently with paricalcitol. She had significant improvement within 2 months. The result sustained for more than 3 years now. Because of hypercalciuria as a side effect from calcitriol therapy, treatment was continued with paricalcitol.

TABLE 1: Laboratory values at each visit.

	At presentation	6 months (calcitriol therapy)	1 yr (calcitriol therapy)	1.5 yr (paricalcitol therapy)	2 yr (paricalcitol therapy)	Normal range
BMI	28.32 (+2.94 SD)	27.80 (+2.77 SD)	27.78 (+2.70 SD)	28.21 (+2.71 SD)		kg/m^2
TSH	4.9	1.71	11.35	4.8	3.16	0.60–4.84 μIU/mL
FT4	1.14	1.31	1.22		1.12	0.9–1.9 ng/dL
PTH	37	18	12	23	31	10–65 pg/mL
P	4.3	4.5	5.6	5.5	5.6	3.5–5.5 mg/dL
Ca	9.6	10.1	10.0	10.2	9.9	8.5–10.5 mg/dL
$1,25(OH)_2D3$	15.7	48	114	110	76	18–80 pg/mL
25(OH)D3	14	42.8	52.9	55.3	47.8	30–100 ng/mL
ALP	200	210	202	212	233	199–440 U/L
24 hr urine Ca		185	229	120	148	Female adults (or >50 kg body weight): <200 mg/24 hours
Urine Ca/Cr		0.21	0.27	0.22	0.17	<0.22%
IgE	120.5		271			<90 U/mL

Conclusions

Calcitriol therapy may be considered as a safe and efficacious treatment option for patients with severe AD, particularly for those with refractory AD, under monitoring for possible side effects.

Treatment with paricalcitol resolves hypercalciuria, is safe, and should be further investigated as an alternative treatment of atopic dermatitis and possibly other diseases of autoimmune origin

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Case Report

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