LETTER TO THE EDITOR

Hypouricemia in a patient with thyrotoxicosis

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The decreased serum uric acid levels observed in a considerable number of diseases or conditions are usually characterized according to whether there is decreased production or increased gastrointestinal and/or renal excretion rates of uric acid (1). Among the factors which may influence uric acid metabolism, excess or deficiency of some hormones apparently induces abnormal serum uric acid levels. Even though hypouricemia due to increased renal uric acid clearance is associated with hypoparathyroidism, primary aldosteronism, and inappropriate secretion of anti-diuretic hormone (2), decreased uric acid levels have not previously been noted in patients with thyrotoxicosis. Here we describe a patient aged 51 years with subacute thyroiditis who developed hypouricemia and urine urate wasting associated with thyrotoxicosis, while during disease remission the values of the uric acid metabolism parameters paralleled those of thyroid function (Table 1). It should be mentioned that the small doses of corticosteroids administered (20 mg prednisone/day) could not have played a role in the changes of uric acid levels observed.

Hypouricemia has previously been described in patients with medullary carcinoma of the thyroid (3, 4), a diagnosis which was excluded in our case by appropriate laboratory tests. Additionally, all the other

conditions known to be related with hypouricemia (carcinomas, lymphomas, syndrome of inappropriate antidiuresis, severe jaundice, Fanconi syndrome, diabetes mellitus, as well as drugs, such as fenofibrate or losartan) were also ruled out (1).

The underlying pathogenetic mechanisms of hypouricemia in our patient are unknown. Further studies should be carried out to delineate the incidence of uric acid metabolism abnormalities in patients with thyrotoxicosis and their pathophysiology.

References

- 1 Maesaka JK & Fishbane S. Regulation of renal urate excretion: A critical review. *American Journal of Kidney Disease* 1998 **32** 917–933.
- 2 Yokogoshi Y & Saito S. Abnormal serum uric acid level in endocrine disorders. *Nippon Rinsho* 1996 **54** 3360–3363.
- 3 Puig JG, Mateos AF, Gaspar G, Martinez EM, Ramos T & Lesmes A. Hypouricemia and medullary carcinoma of the thyroid. *Advances in Experimental Medicine and Biology* 1984 **165A** 211–213.
- 4 Gaspar G, Martinez EM & Lisbona A. Hipouricemia y carcinoma medular de tiroides. *Medicina Clinica* 1982 **79** 464–467.

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Table 1 Patient's laboratory parameters.

Parameters	Normal values	On diagnosis	Days after diagnosis					
			5th	10th	15th	20th	30th	40th
T ₃ (ng/dl)	80–200	155	145	100	80	71	63	105
T ₄ (μg/dl)	4.5–12	18.5	17.3	13.2	9.25	8.4	5.3	7.8
FT ₄ (ng/dl)	0.8–2.7	3.65	3.27	2.45	2.08	0.74	0.54	1.1
TSH (μU/ml)	0.5–4.8	0	0.03	0.05	0.05	0.05	4.36	2.4
Total cholesterol (mg/dl)		121	144	165	180	214	230	245
Uric acid (mg/dl)	4–7	1.8	2.5	3	3.7	3.8	4.0	4.6
Fractional excretion of uric acid (%)	8–12	21	15	14	15	15	10	10.5