Thyrotoxic Periodic Paralysis in a young Arab Emirati Man

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Case History: A 23 year old Emirati man presented to the Endocrinology Clinic with a history of tiredness and muscular aches and pains especially in the mornings. He was finding walking up stairs difficult. Thyrotoxicosis had been diagnosed three years previously. He was treated with carbimazole which he had not taken for over a month. There was no family history of note. On examination he was noted to be anxious and had sweaty palms. He had no ophthalmopathy. He had a small diffuse goitre. He had a sinus tachycardia of 103 beats per minute and a blood pressure of 139/81 mm Hg. General examination was otherwise unremarkable.

Investigations: TSH 0.005 mU/l, FT4 64.98 (12-22) pmol/l, FT3 28.45 (3.1-6.8) pmol/l. TSH receptor antibody 5.63 (<1.75) iU/l. Na 139.5 mmol/l, K 3.5 mmol/l, U 3.6 mmol/l, Creatinine 64.3 mmol/l. Glucose, LFT, calcium, CK & FBC were normal.

Results and Treatment: A diagnosis of Graves' Disease was made. The patient was treated with carbimazole 20mg tds and improved. Six weeks later he was brought to the clinic in a wheelchair, feeling weak and unable to move his legs. He had generalised grade 2-3/6 muscle weakness. Repeat tests showed: TSH 0.005 mU/l, FT4 32.8 pmol/l, CK 147 mmol/l, Na 139 mmol/l, K 2.2 mmol/l, U 4.2 mmol/l, Creatinine 79 mmol/l. ECG showed widespread T wave inversion. He admitted that he had taken several chocolate bars and a heavy meal including rice the previous night. He was admitted to hospital and treated with a potassium infusion in normal saline followed by oral potassium supplements for a day. He was also prescribed propranolol and continued carbimazole.

Conclusion: Thyrotoxic periodic paralysis is rare and has been mainly described in the oriental race. Few case reports in Saudi and also Lebanese Arabs have been described in the literature. To our knowledge this is the first case report on an Emirati patient. Hypokalaemia and paralysis is precipitated by high carbohydrate meals.

Point for Discussion: Racial preponderance, genetics, mechanisms and treatment.