CASE REPORT

Licorice Ameliorates Postural Hypotension Caused by Diabetic Autonomic Neuropathy

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Diabetes can be complicated by autonomic neuropathy, and, in a few cases, a postural hypotension is observed (1,2). We report here a case of severe postural hypotension of a patient who recovered during licorice treatment.

The patient was 63 years of age, had a diagnosis of type II diabetes in 1988, and was treated with glibenclamide and metformine.

The patient was admitted to our metabolic unit in 1992 for dizziness and postural hypotension. At admission, blood pressure in the recumbent position was 150/80 mmHg and fell to 90/60 mmHg after 1 min of sitting in an upright position, to 85/60 after 3 min, and to 110/85 after 5 min. In previous months, she was not able to walk or even leave her bed. Fasting blood glucose was 9.9 mmol/l, and glycated hemoglobin was 8.7 mg/dl. Kidney and liver functions were normal. Urine glucose excretion was 11 mmol/day without microalbuminuria. Electroencephalogram, carotid doppler ultrasonography, and vestibular function were normal. Electromyography revealed a severe neuromotory and sensitive neuropathy. Serum potassium was 4.1 mmol/l, and sodium was 143 mmol/l. After compensation for diabetes, recumbent plasma renin activity (PRA) was 1.5 ng·ml⁻¹·h⁻¹, and plasma aldosterone was 765 pmol/l. In the upright position, PRA was 7.5 ng·ml⁻¹·h⁻¹, and aldosterone was 1,445 pmol/l. Urinary aldosterone was 20.2 nmol/day.

The patient was treated with a commercial preparation of licorice (Saila, Bologna, Italy) with a calculated intake of glycyrrhizic acid of 3 g/day. This treatment produced a rapid amelioration of symptoms. After 7 days of therapy, blood pressure was 150/90 mmHg, PRA was 1.2 ng·ml⁻¹·h⁻¹, and aldosterone was 24.3 pmol/l in the recumbent position; and in the upright position, blood pressure was 130/80 mmHg, PRA was 1.6 ng·ml⁻¹·h⁻¹, and plasma aldosterone was 126 pmol/l. Serum potassium was 4.1 mmol/l, and sodium was 135 mmol/l. She was able to walk, and in the following 3 months, she did not need any further advice. To confirm the real benefit of licorice, the treatment was withdrawn; the clinical symptoms returned in a few days.

The data show that licorice could be used for the care of postural hypotension attributable to autonomic diabetic neuropathy. The explanation for the phenomenon could simply be related to a volume expansion as a result of a mineralocorticoid-like effect of licorice. This effect could be direct (3) or mediated by a block of 11-hydroxysteroid dehydrogenase (4). A possible direct effect of licorice at the level of the vascular bed cannot be excluded.

References

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Received for publication 29 April 1994 and accepted 5 May 1994.