Letter to the Editor

Is It Ethical to Perform Irreversible Renal Denervation Before a Trial of Low Sodium Intake for Treatment-Resistant Hypertension?

To the Editor:

Current guidelines emphasize the importance of identification and reversal of lifestyle factors in the management of resistant hypertension. This position is supported by evidence that dietary modification, particularly a decrease in salt intake, is effective not only in mild-to-moderate hypertension but also in resistant hypertension. A recent study in which renal sympathetic innervation was irreversibly disrupted by radiofrequency ablation is, therefore, of concern. We believe that, before heroic measures are taken to control resistant hypertension, it is appropriate not only to attempt dietary modification but also to provide assurance that dietary modification is effective by performing 24-hour urinary sodium measurements. The absence of such information from the study of Krum et al raises the possibility that adequate dietary intervention might have spared at least some of the subjects not only the inconvenience of the intervention but also the 3% complication rate of this experimental procedure. It is possible that the authors, or Ardian Inc (who participated in trial design, data management, data analysis, article preparation, and review), may have such data, in which case we would invite them to provide evidence that maximal attempts at dietary modification were used before radiofrequency ablation.

It might be argued that lowering of sodium intake would not have achieved effects similar to those observed in the study; however, hypertension in most patients is sensitive to sodium and potassium intake. A 1-week reduction of sodium intake from 252 to 46 mmol/d in patients with treatment-resistant hypertension resulted in systolic blood pressure (BP) and diastolic BP reductions of 22.7 and 9.1 mm Hg, respectively. BP has been shown to keep falling for several weeks after sodium intake reduction, so greater BP reduction is likely with low-salt diets of longer duration. In some cases, extremely severe hypertension can be controlled by a diet with low sodium and high potassium intakes, for example, after 55 days on a diet low in salt (5.1 mmol of salt per day) and rich in potassium, the BP of a 23-year-old man fell from 230/150 to 130/90 mm Hg. We suggest that, in patients with severe high BP that is poorly controlled despite the use of multiple antihypertensive agents, sodium chloride intake be lowered to <20 mmol/d, and potassium intake be maintained above 120 mmol/d, as recommended by the Institute of Medicine, for ≥6 weeks (documented by 24-hour urine collection), before irreversible sympathetic destruction is contemplated.

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