

The Dietary Approaches to Stop Hypertension diet lowered systolic blood pressure in stage-1 isolated systolic hypertension

Moore TJ, Conlin PR, Ard J, Svetkey LP, for the DASH Collaborative Research Group. DASH (Dietary Approaches to Stop Hypertension) diet is effective treatment for stage 1 isolated systolic hypertension. *Hypertension*. 2001 Aug;38:155-8.

QUESTION

In patients with stage-1 isolated systolic hypertension (ISH), does the Dietary Approaches to Stop Hypertension (DASH) diet lower systolic blood pressure (SBP)?

DESIGN

Randomized (unclear allocation concealment*), unblinded,* controlled trial with 8-week follow-up (subgroup analysis of the DASH trial).

SETTING

Multicenter study in the United States.

PATIENTS

Among the 459 patients in the DASH trial, this study focused on 72 patients (mean age 54 y, 52% men) with stage-1 ISH (SBP 140 to 159 mm Hg and diastolic BP < 90 mm Hg).

INTERVENTION

After a 3-week run-in period on a typical American (control) diet, patients were allocated to 1 of 3 diets for 8 weeks: the DASH diet ($n = 23$), which is rich in fruits, vegetables, and low-fat dairy foods; a diet rich in fruits and vegetables ($n = 24$); or continua-

tion of the control diet ($n = 25$). All patients were included in the analysis.

MAIN OUTCOME MEASURE

Change in SBP.

MAIN RESULTS

Analysis was by intention to treat. SBP was lower in patients assigned to the DASH diet than in those assigned to the control diet ($P < 0.001$) or those assigned to the fruits-and-vegetables diet ($P < 0.01$) (Table). In the DASH diet group, more patients reduced their SBP to < 140 mm Hg than did those in the control group (Table). The difference in SBP reduction was of borderline significance between the DASH diet group and

the fruits-and-vegetables group ($P = 0.07$) (Table).

CONCLUSION

In patients with stage-1 isolated systolic hypertension, the Dietary Approaches to Stop Hypertension diet lowered systolic blood pressure more than did a control diet or a fruits-and-vegetables diet.

Sources of funding: National Institutes of Health and the Office of Research on Minority Health.

For correspondence: Dr. T.J. Moore, Boston University Medical Center, Boston, MA, USA. E-mail tmoore@bu.edu. ■

*See Glossary.

Dietary Approaches to Stop Hypertension (DASH) diet vs a fruits-and-vegetables diet (FV) and a control diet in stage-1 isolated systolic hypertension at 8 weeks†

Outcomes	Comparisons	Mean change from baseline (95% CI)		
Change in SBP (mm Hg)	DASH vs control	-11.2 (-6.1 to -16.2)		
	DASH vs FV	-8.0 (-2.5 to -13.4)		
SBP <140 mm Hg		Event rates	RBI (CI)	NNT (CI)
	DASH vs control	78% vs 24%	226% (69 to 597)	2 (2 to 4)
	DASH vs FV	78% vs 50%	57% (1 to 158)	Borderline significance

†SBP = systolic blood pressure. Other abbreviations defined in Glossary; RBI, NNT, and CI calculated from data in article.

COMMENTARY

The success of the DASH diet in treating ISH is particularly good news. ISH is the most common form of hypertension in the elderly, who have frequent side effects from medication (1). In particular, orthostatic hypotension may provoke falls or fractures.

Will general-practice patients comply with and benefit from the DASH diet? In studies evaluating the DASH diet, adherence is assured by supplying meals to the participants. The Trial of Nonpharmacologic Interventions in the Elderly (TONE) showed that older patients with hypertension (those likely to have ISH) can adhere to a healthier diet for 30 months. 40% of those on a low-salt diet were able to discontinue antihypertensive medication, and 44% were able to stop medication by using both weight reduction and salt restriction (2). Hospitals and institutions for the elderly can and should serve low-fat diets similar to the DASH diet.

Can we improve compliance with beneficial lifestyle changes? Counseling in the doctor's office is not enough. Most patients forget the advice they have been given (3). Health promotion programs must reinforce the guidance supplied in the office. Mass media campaigns are helpful. Mailing newsletters to patients improves compliance (4). Our general-practice patients have had difficulty understanding the DASH diet. The diet lists the type and quantity of food allowed. Supplying sample menus would facilitate patient adherence. Hospitals need to become models by adopting healthy diets for all patients and staff.

A low-sodium DASH diet was more effective in lowering BP than

the standard DASH diets (5). Because elderly patients (and African Americans) are most sensitive to sodium restriction, the low-sodium DASH diet may prove more effective in treating ISH. Those patients whose BP was not reduced by DASH (10%) might have responded to additional sodium restriction.

*David Blecker, MD, MPH
Regional Nephrology Association
Northfield, New Jersey, USA*

References

1. The sixth report of the Joint National Committee on prevention, detection, and treatment of high blood pressure. *Arch Intern Med*. 1997;157:2413-46.
2. Whelton PK, Appel LJ, Espeland MA, et al. Sodium reduction and weight loss in the treatment of hypertension in older persons: randomized controlled trial of nonpharmacologic interventions in the elderly (TONE). *JAMA*. 1998;279:839-46.
3. Kravitz RL, Hays RD, Sherbourne CD, et al. Recall of recommendations and adherence to advice among patients with chronic medical conditions. *Arch Intern Med*. 1993;23:1869-78.
4. Fries JF, Fries ST, Parcell CL, Harrington H. Health risk changes with a low-cost individualized health promotion program: effects at up to 30 months. *Am J Health Promot*. 1992;6:364-71.
5. Sacks FM, Svetkey LP, Vollmer WM, et al. Effects on blood pressure of reduced dietary sodium and the Dietary Approaches to Stop Hypertension (DASH) diet. *N Engl J Med*. 2001;344:3-10.