Self-Monitoring of Blood Pressure in Primary Care: Is It Useful?

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Blood pressure (BP) is usually measured and monitored in the healthcare system by doctors or nurses in hospital outpatient departments and in primary care settings. International comparisons on quality of BP control have been disappointing, showing that only a small proportion of patients with high BP achieve targets set by national and international guidelines.1

Measuring BP at home is becoming increasingly popular for both doctors and patients. However, until recently little evidence was available as to whether home monitoring leads to better control of high BP. Two recent reports have increased the interest in the subject. A meta-analysis of published trials has shown that BP control in people with hypertension (assessed in the clinic) and the proportion achieving targets are increased when home BP monitoring is used rather than standard BP monitoring in the healthcare system.2 The effect is not negligible (2.2 [95% CI −0.9−5.3] mm Hg for systolic and 1.9 [0.6−3.2] mm Hg for diastolic BP). A multicenter randomized trial compared the use of BP measurements taken in the physician’s office and at home and the potential impact on the management of hypertension.3 After 1 year, home BP levels were lower than office BP. Adjustment of antihypertensive treatment on the basis of home BP instead of office BP led to less intensive drug treatment and lower costs.

The article by Halme and colleagues4 in the current issue of the American Journal of Hypertension extends the evidence to a primary health care setting. This is a multicenter 6-month randomized trial of self-monitoring of BP compared to control standard office measurements in primary care. The outcomes were changes in BP and proportion of patients reaching target BP.

The results are compatible with the results of a published meta-analysis.2 However, the study has limitations. Several centers were used and only 5 patients per center were originally enrolled. Although randomization to intervention and control group was in blocks, there is still the possibility of bias being introduced by a cluster effect. This is particularly important as the doctor who was taking the decision about changing treatment was not blinded to the allocation group. An adjustment by center would have been useful, although probably ineffective, due to the small sample size.

The latter is another important limitation. The original sample size calculations were clearly optimistic (expected difference in diastolic BP between groups was 3 mm Hg with a SD of 7 mm Hg). From Table 3 the difference between the control and self-measured groups was 3.3/0.8 mm Hg (P = .047/not significant [NS]) in the home BP and 3.2/1.5 mm Hg (P = NS/NS) in the office BP, always in favor of the intervention. The differences were less than expected and the standard deviations were larger in the office than in the home BP. The study is therefore underpowered.

Finally, it would have been useful to monitor the number of contacts with the doctor in the two groups. If not comparable, the better outcome in the self-monitoring group could be explained by more frequent consultations rather than self-interest into the BP management.

Notwithstanding these pitfalls, the study highlights the potential role that self-monitoring of BP can play in helping improve the management of high BP in the community.

References