Long-Term Risk in Subjects With White-Coat Hypertension

To the Editor:

We read with great interest the article by Mancia et al1 clarifying the increased risk of developing sustained hypertension in subjects with white-coat hypertension, compared with normotensive patients, using home blood pressure measurements and ambulatory blood pressure monitoring. This study was performed over a 10-year period in the Pressioni Arteriose Monitorate e Loro Associazioni Study population.

Previously, we reported that subjects with white-coat hypertension are at increased risk of developing home hypertension, on the basis of home blood pressure measurements, during an 8-year follow-up period in the Ohasama Study.2 We demonstrated that the odds ratio for white-coat hypertensive subjects to develop home hypertension was significantly higher compared with normotensives (odds ratio: 2.86; P<0.001). The odds ratio for white-coat hypertensives to develop home hypertension was elevated even in the subgroup with normal home blood pressures (home blood pressure: <125/80 mm Hg; odds ratio: 2.24; P=0.007).2 These results indicate that white-coat hypertension could pose a greater risk for the development of home hypertension, independent of home blood pressure levels at baseline.

Therefore, we were interested in the results from the subgroup analysis of the home blood pressure levels or ambulatory blood pressure levels at baseline in the Pressioni Arteriose Monitorate e Loro Associazioni Study. The results from the Pressioni Arteriose Monitorate e Loro Associazioni Study confirm the findings from the Ohasama Study. We also reported that, although stroke risk in white-coat hypertensives did not significantly differ from that in normotensives, on the basis of ambulatory blood pressure monitoring (relative hazard: 1.07; 95% CI: 0.58 to 2.07), the 95% CI indicated that a small- to moderate-sized increase in risk remained in white-coat hypertensives compared with normotensives after a 10-year follow-up in the Ohasama Study.3 Verdecchia et al4 also reported that the cumulative hazard for stroke in white-coat hypertensives, on the basis of ambulatory blood pressure monitoring, tended to increase after 6 years of follow-up and exceeded that of the ambulatory hypertensives after 9 years of follow-up. These findings were based on the International Collaborative Study of the Prognostic Utility of Ambulatory Blood Pressure Monitoring, including the data from the Ohasama Study, although white-coat hypertension was not associated with a definite increased risk of stroke during the total follow-up period.5 These results suggest that there is a possible increased risk of future cardiovascular events in subjects with white-coat hypertension. However, the risk of cardiovascular events in white-coat hypertensive subjects compared with normotensives during a longer follow-up period has not been examined. In addition, guidance is lacking as to how we should treat patients with white-coat hypertension to prevent cardiovascular events in the future.

Therefore, it appears necessary to periodically examine out-of-office blood pressure values, as well as cardiovascular risk and target organ damage, in subjects with white-coat hypertension. A randomized, controlled trial is required whereby subjects with white-coat hypertension are randomly assigned to have their blood pressure controlled on the basis of both office blood pressure and out-of-office blood pressure measurements.

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None.

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References

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