Letters to the editor

Office hypertension in Type 2 (non-insulin-dependent) diabetic patients

Dear Sir,

The definition of hypertension has been based upon office blood pressure determinations. "White-coat" hypertension and "office" hypertension are a manifestation of an alarm reaction whereby blood pressure meets the criteria for hypertension when determined in the physician's office, but is normal at other times. In a non-diabetic population, the prevalence of white-coat hypertension is 21% [1].

Hypertension is a cardiovascular risk factor, and is an important accelerator of some diabetic complications. The prevalence of white-coat or office hypertension in a diabetic population has not hitherto been described.

In this study, 29 Type 2 (non-insulin-dependent) diabetic patients with microalbuminuria were being screened for participation in an interventional trial of anti-hypertensive therapy. At the time of assessment, all were free of anti-hypertensive drugs. The patient had an office blood pressure determined by the study nurse, using a mercury sphygmomanometer after sitting for 1 and 5 min. Ambulatory blood pressure monitoring was performed using a Takeda TM-2420 (A & D Co., Tokyo Japan) [2].

For purposes of analysis, only the ambulatory blood pressures from 08.00 hours to 12.00 hours were used, as this coincided with the time period that the patients were seen at the clinic. Hypertension was defined as a mean arterial pressure (MAP) of ≥ 100 mmHg, and office hypertension was defined as MAP in the office setting greater than the MAP in the ambulatory period. This level of blood pressure was adopted because a blood pressure of 130/85 may be optimal blood pressure in a diabetic patient to minimize progression of renal disease [3].

Office blood pressures taken by the nurse at 1 and 5 min were reproducible with a correlation coefficient of 0.96. Figure 1 depicts the

office MAP compared to the mean ambulatory MAP. Using our criteria, 18 of 29 (62%) patients demonstrated office hypertension (MAP ≥ 100 mmHg in the office but not on the ambulatory blood pressure monitor). Four patients had an ambulatory MAP greater than 100 mmHg, but had an office MAP of less than 100 mmHg. Seven patients were concordant. The difference between the standard error of the ambulatory MAP between groups was not significant (17.1 vs 14.9), nor was heart rate (73 vs 73) (office vs no office hypertension respectively).

The prevalence of office hypertension in the Type 2 diabetic study population appears to be greater than that described in the non-diabetic population (62% vs 21% respectively). The definition of "office" hypertension in this study uses the differences between the blood pressures as taken by a nurse and those of the ambulatory blood pressure monitor. The definition of "white-coat" hypertension uses the difference between the blood pressure taken by a physician and the ambulatory blood pressure. Since the blood pressure reported by a nurse is usually lower than that reported by a physician [4], the differences described in this study take on greater importance.

The reason for the high prevalence of office hypertension in this group of Type 2 diabetic patients is not immediately apparent. If heart rate can be used as an indicator of sympathetic discharge, there was no detectable difference between the group with "office" hypertension and the other patients. The presence of autonomic neuropathy or poor baroreceptor function could account for an increased prevalence of office hypertension in the Type 2 diabetic patients and might contribute to lability and slow or incomplete recovery after an alarm reaction.

The high prevalence of office hypertension in this patient population may impact on the approach to treatment of hypertension.

Yours sincerely,

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Fig. 1. The office mean arterial pressure (MAP) compared to the mean ambulatory MAP calculated in the time interval of 08.00 hours to 12.00 hours. The stippled lines denote a MAP of 100 mmHg

References

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