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**Title** : Blood pressure variability in patients with diabetes mellitus

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**Abstract** : Reduced arterial compliance in patients with diabetes mellitus has been shown in several studies, but it has not been significantly associated with either atherosclerosis or vessel wall thickness. Blood pressure variability is still poorly explored in diabetic patients. The aim of this study was to compare blood pressure variability and arterial compliance in patients with type 2 diabetes mellitus and controls matched for sex, age, and weight. Arterial compliance was measured and noninvasive 24-h ambulatory blood pressure monitoring was performed in 18 diabetic patients and 18 controls. There was significantly higher 24-h systolic blood pressure variability ( $17.7 \pm 6.8$  vs.  $14.6 \pm 2.6$ mmHg), diastolic blood pressure variability ( $15.6 \pm 7.1$  vs.  $11.4 \pm 3.1$ mmHg), and mean arterial blood pressure variability ( $14.8 \pm 7.0$  vs.  $11.1 \pm 2.9$ ) in diabetic patients. Systolic, diastolic, and mean arterial blood pressure variability was significantly higher during daytime but not night time in diabetic patients compared to controls. Diabetic patients also had significantly reduced small artery compliance, but no differences in large artery compliance, cardiac output, or systemic vascular resistance. The findings suggest that hyperglycemia may affect the compliance of the vascular system, resulting in high blood pressure fluctuations. © 2010 SAGE Publications.

**Subject** : Ambulatory; Atherosclerosis; Blood Pressure; Blood Pressure Monitoring; Diabetes Mellitus; Hemodynamics; Type 2

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