SIMILAR PULSE PRESSURE AND SYTOLIC BLOOD PRESSURE X HEART RATE DOUBLE PRODUCT IN MIDDLE-AGE PATIENTS WITH TYPE 1 DIABETES AND WITH TYPE 2 DIABETES.

A.J. Scheen, J.C. Philips, M. Marchand.
Division of Diabetes, Nutrition & Metabolic Disorders, Department of Medicine, CHU Sart Tilman, B-4000 Liège, Belgium.

BACKGROUND

Arterial pulse pressure (PP) is considered as an independent cardiovascular risk factor in both patients with type 1 (T1DM) and type 2 (T2DM) diabetes mellitus. We compared systolic blood pressure (SBP), PP and SBP x heart rate (HR) double product during an active orthostatic test in patients with T1DM and patients with T2DM matched for age (40-60 years) and sex ratio (1/1).

METHODS

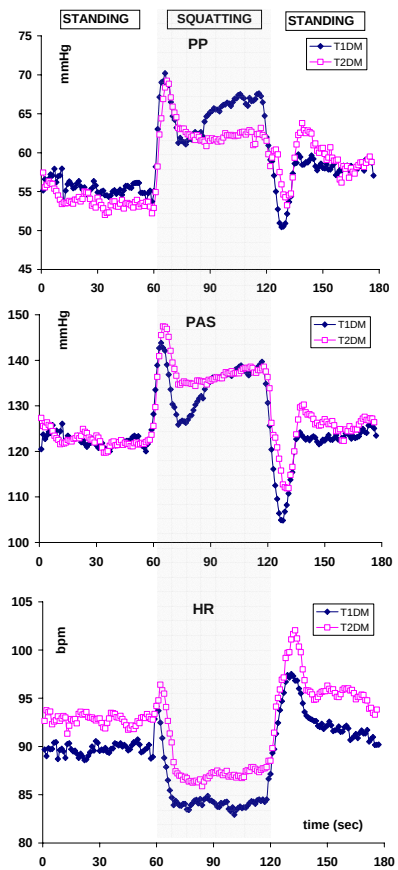
Patients

	T1DM	T2DM	P
N (Male/Female)	20/20	20/20	
Age (yrs)	50 ± 6	50 ± 6	0.8853
Diabetes duration (yrs)	23 ±11	8 ± 7	<0.0001
BMI (kg/m^2)	23.0 ± 2.0	29.7 ± 3.7	<0.0001

Patients taking antihypertensive agents or with renal insufficiency were excluded

Squatting Test

All patients were evaluated with a continuous noninvasive arterial blood pressure monitoring (Finapres®) in standing (1min), squatting (1min) and again standing position again (1min).



RESULTS

	T1DM	T2DM	P
Overall values			
SBP (mm Hg)	126 ± 21	128 ± 20	0.6344
PP (mm Hg)	59 ± 13	58 ± 16	0.7907
HR (bpm)	88 ±13	91 ± 10	0.2374
SBP x HR (mm Hg*min^{-1})	11120 ± 2947	12082 ± 2521	0.1638
Changes during Squatting			
Delta SBP (mm Hg)	13 ± 11	14 ±14	0.8364
Delta PP (mmHg)	10 ± 8	8 ± 11	0.4353
Delta HR (/min)	-6 ± 7	-6 ± 7	0.94.96
Delta SBPxHR (mmHg*min^{-1})	1136± 1270	1236 ± 1440	0.7459

There were no significant differences between T1DM and T2DM patients regarding SBP, PP and SBPxHR, PP increase and HR reduction during squatting were also similar in both groups.

CONCLUSIONS

Patients with T1DM have comparable PP, an indirect marker of arterial stiffness, and SBPxHR double product, an index of cardiac workload, as patients with T2DM at similar mean age of 50 years. The negative influence of much longer diabetes duration might be compensated for by the positive influence of lower BMI and less insulin resistance in T1DM patients, leading finally to comparable cardiovascular risk markers as in T2DM