SUPPLEMENTARY MATERIAL

Table S1. Drug treatment in the clinical groups: comparison between A., older healthy controls, T2DM and hypertensive patients (A). And younger controls and T1DM patients (B). Data are presented as "yes (%)".

	Control N (%) (114)	Hypertension N (%) (69)	N-T2DM N (%) (25)	H-T2DM N (%) (99)
Antihypertensives	/	41 (59)	/	92 (93)
- ACE inhibitors	/	10 (14)	/	45 (45)
- ARB	/	9 (13)	/	38 (38)
- Beta blockers	/	20 (29)	/	27 (27)
- Alpha blockers	/	/	/	6 (6)
- DHP	/	21 (30)	/	35 (35)
- Diuretics	/	4 (6)	/	28 (28)
Antidiabetics (oral)	/	/	19 (76)	81 (82)
Insulin	/	/	4 (16)	35 (35)
Statin	/	17 (25)	4 (16)	72 (73)
Antiarrythmics	/	3 (4)	/	2 (2)
Antiplatelet	/	9 (13)	1 (4)	35 (35)

ACE = Angiotensin converting enzyme, ARB = angiotensin receptors blockers, DHP = dihydropyridine calcium channel blockers.

Table S2. Age-correlation of haemodynamic characteristics in the control group. [*]p<0.01, [†]p<0.001.

	Correlations with Age		
	Mean ± SD	**Correlation**	**Covariate**
HR [bpm]	61.9 ± 8.6	N.S.	/
SBP [mmHg]	107.5 ± 15.7	$r = 0.47^{\dagger}$	/
DBP [mmHg]	71.8 ± 9.2	$r = 0.35^{\dagger}$	/
PP [mmHg]	35.7 ± 12.5	$r = 0.34^{\dagger}$	/
IMT [mm]	0.58 ± 0.16	$r = 0.79^{\dagger}$	/
IMT/ $_dD$ [-]	0.08 ± 0.02	$r = 0.66^{\dagger}$	/
H_A [mmHg mm]	0.84 ± 1.14	$r = -0.47^{\dagger}$	/
H_I [-]	0.041 ± 0.038	$r = -0.48^{\dagger}$	/
ΔDs [%]	-10.2 ± 13.3	$r = -0.31^{\dagger}$	/
$_sD$ [mm]	7.54 ± 0.90	$r = 0.29^{*}$	SBP, HR
$_dD$ [mm]	7.00 ± 0.91	$r = 0.47^{\dagger}$	DBP, HR
ΔD [mm]	0.55 ± 0.16	$r = 0.69^{\dagger}$	PP
cPWV [m/s]	4.85 ± 1.14	$r = 0.70^{\dagger}$	DBP, HR
$_sDs$ [MPa^{-1}]	45.1 ± 19.4	$r = -0.48^{\dagger}$	DBP, HR
$_dDs$ [MPa^{-1}]	51.1 ± 21.8	$r = -0.59^{\dagger}$	DBP, HR

Table S3 – comparison between carotid pulse wave velocity (cPWV) calculated using the sequential and simultaneous analysis protocol. SD: standard deviation.

Subject ID	cPWV synchronous analysis		cPWV sequential analysis	Difference	Difference %
	Average	SD			
1	4.05	0.38	4.13	0.07	1.78
2	6.06	0.95	5.64	-0.42	-6.98
3	4.04	0.24	3.96	-0.08	-1.93
4	5.81	0.45	5.83	0.02	0.37
5	4.16	0.22	4.28	0.12	2.95
6	7.10	0.81	6.97	-0.13	-1.89
7	5.75	0.40	5.84	0.09	1.65
8	5.43	0.26	5.76	0.33	6.09
9	6.16	0.28	6.19	0.07	1.20
10	4.16	0.31	4.05	-0.11	-2.68
11	7.66	0.74	7.63	-0.03	-0.34
12	9.08	0.77	9.05	-0.03	-0.28
13	6.18	0.62	6.33	0.15	2.39
14	5.92	0.25	5.87	-0.05	-0.78
15	6.01	0.56	5.93	-0.08	-1.33
16	8.26	0.99	8.24	-0.02	-0.27
17	4.18	0.82	4.10	-0.08	-1.80
18	6.63	0.37	6.31	-0.32	-4.77
19	6.12	1.03	6.09	-0.03	-0.46
20	6.38	0.94	6.60	0.22	3.39
21	3.07	0.22	3.03	-0.04	-1.24
22	5.03	0.56	5.23	0.20	4.02
23	5.95	0.26	5.23	0.24	4.02
24	5.03	0.77	5.00	-0.03	-0.57
25	6.63	0.11	6.61	-0.02	-0.32
Average	**5.79**	**0.53**	**5.80**	**0.00**	**0.09**
SD	1.40	0.29	1.39	0.16	2.86

Table S4. Results of the multivariate regression analysis including different classes of antihypertensive treatment.

Outcomes → Tested variables	IMT	$_sD$	$_dD$	ΔD	cPWV	$_dDs$	$_sDs$	ΔDs	H_A	H_I
Sex	−	$-0.34 \pm 0.06^{\ddagger}$	$-0.34 \pm 0.06^{\ddagger}$	−	−	−	−	−	−	−
Age	$0.40 \pm 0.07^{\ddagger}$	$0.24 \pm 0.06^{\ddagger}$	$0.24 \pm 0.06^{\ddagger}$	−	$0.27 \pm 0.06^{\ddagger}$	$-0.29 \pm 0.07^{\ddagger}$	$-0.29 \pm 0.07^{\ddagger}$	−	−	−
US	−	−	−	$0.23 \pm 0.08^{\dagger}$	−	−	−	−	−	−
HR	−	−	−	$-0.19 \pm 0.09^{*}$	−	−	−	−	$-0.21 \pm 0.08^{*}$	−
MBP	−	$0.12 \pm 0.06^{*}$	$0.13 \pm 0.06^{*}$	−	$0.40 \pm 0.06^{\ddagger}$	$-0.39 \pm 0.07^{\ddagger}$	$-0.44 \pm 0.07^{\ddagger}$	$0.24 \pm 0.08^{\dagger}$	$0.29 \pm 0.07^{\ddagger}$	$0.20 \pm 0.08^{*}$
ACE inhibitors	−	−	−	−	−	−	−	−	−	−
ARB	−	−	−	−	−	−	−	−	$0.23 \pm 0.09^{\dagger}$	$0.26 \pm 0.09^{\dagger}$
Beta blockers	−	−	−	−	−	−	−	−	−	−
Alpha blockers	−	−	−	−	−	−	−	−	−	−
DHP	−	−	−	−	−	−	−	−	−	−
Diuretics	−	−	−	−	−	−	−	−	−	−
T2DM	−	$0.18 \pm 0.08^{*}$	$0.18 \pm 0.08^{*}$	−	−	−	−	−	−	−

Data are presented as beta ± standard error, with *p<0.05, †p<0.01, and ‡p<0.001.

ACE = Angiotensin converting enzyme, ARB=angiotensin receptor blockers, cPWV=local carotid pulse wave velocity, DBP=diastolic blood pressure, $_dD$=carotid diameter at DBP, $_dDs$=distensibility in late diastole, ΔD= $_sD$- $_dD$, ΔDs%=($_dDs$ - $_sDs$)/$_dDs$ =change in Distensibility as a %, DHP=dihydropyridine calcium channel blockers, H_A=hysteresis area, and H_I=hysteresis index, HR=heart rate, IMT=intima media thickness, MBP=mean blood pressure, PP=pulse pressure, SBP$_b$=brachial systolic blood pressure, SBP$_c$=carotid systolic blood pressure, $_sD$=carotid diameter at SBP$_c$, $_sDs$= distensibility in early systole, T2DM=type 2 diabetes mellitus.

Dichotomic variables: sex: male=0, female=1; US: Aloka=0, Esaote=1; ACE inhibitors, ARB, beta blockers, alpha blockers, DHP and diuretics: untreated=0, treated=1; T2DM: no=0, yes=1.

Online figure 1 – Relationship between cPWV and age in healthy controls.

A

cPWV [m/s] vs Age [years]

$$cPWV = 8.4 \times 10^{-4}\ Age^2 - 0.028\ Age + 4.078$$

$$R^2 = 0.38$$