

A Study of the Arterial Stiffness Index in Diabetes Patients: Trial of a New Non-Invasive Arterial Hardness Estimation Procedure that Uses an Oscillometric Method

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Introduction:

The CardioVision Model MS-2000 (distributed by IMDP Corporation USA) system applies the oscillometric method to measure arterial stiffness, which is quantified by the Arterial Stiffness Index (ASI). Using this device, we compared arterial stiffness in diabetes and non-diabetes patients.

Subjects and Method:

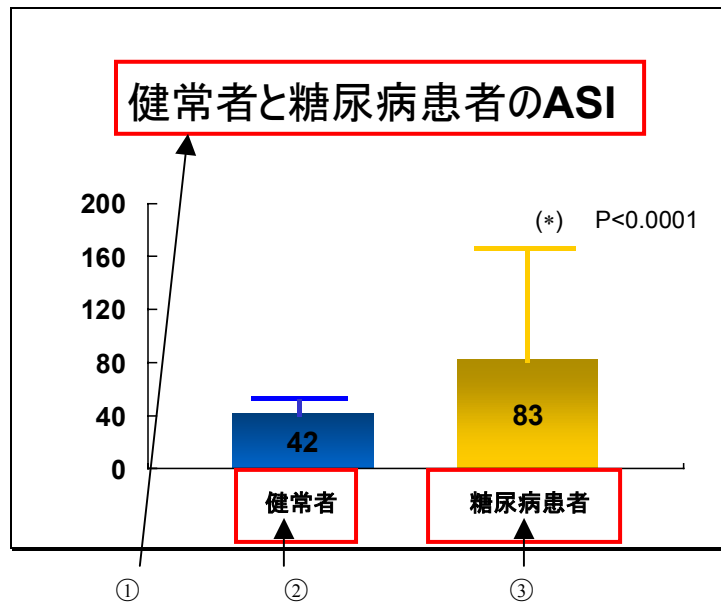
202 outpatients with Type 2 diabetes participated in this study. 54 regular medical checkup patients participated as a control group. ASI measurement was conducted with the subject in a sitting position and rested state and was repeated for each subject 3 to 5 times.

Result:

The diabetes patients' ASI of 104 was significantly higher than the non-diabetes patients' ASI of 41. A strong correlation with age, blood pressure, and BMI was also noted. When we categorized diabetes subjects by general danger factors, those patients who also had high blood pressure demonstrated a prominent increased ASI score.

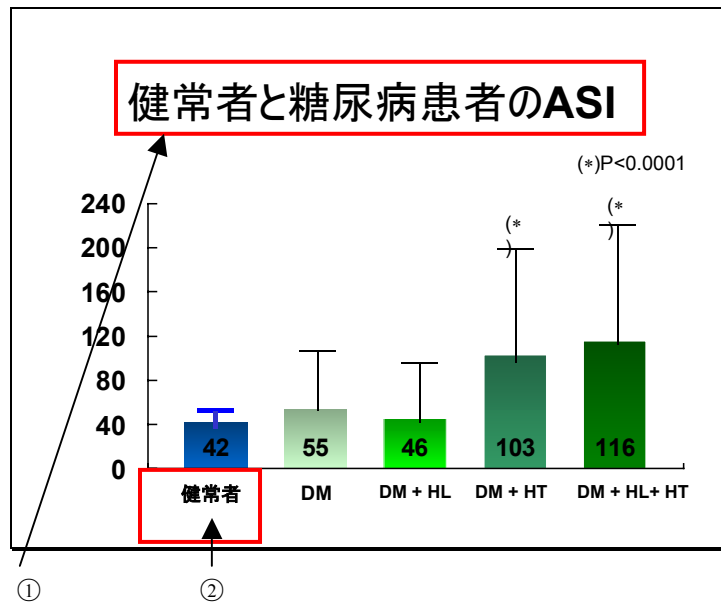
Observations:

Diabetes patients demonstrated significantly increased arterial stiffness. As data accumulates, we expect that the ASI system will emerge as a new non-invasive standard for measuring arterial stiffness.



English

- ① Normal/healthy subjects and diabetes patients' ASI
- ② Normal/ healthy subjects
- ③ Diabetes patient



English

① Normal/healthy subjects and diabetes patients' ASI

② Normal/ healthy subjects

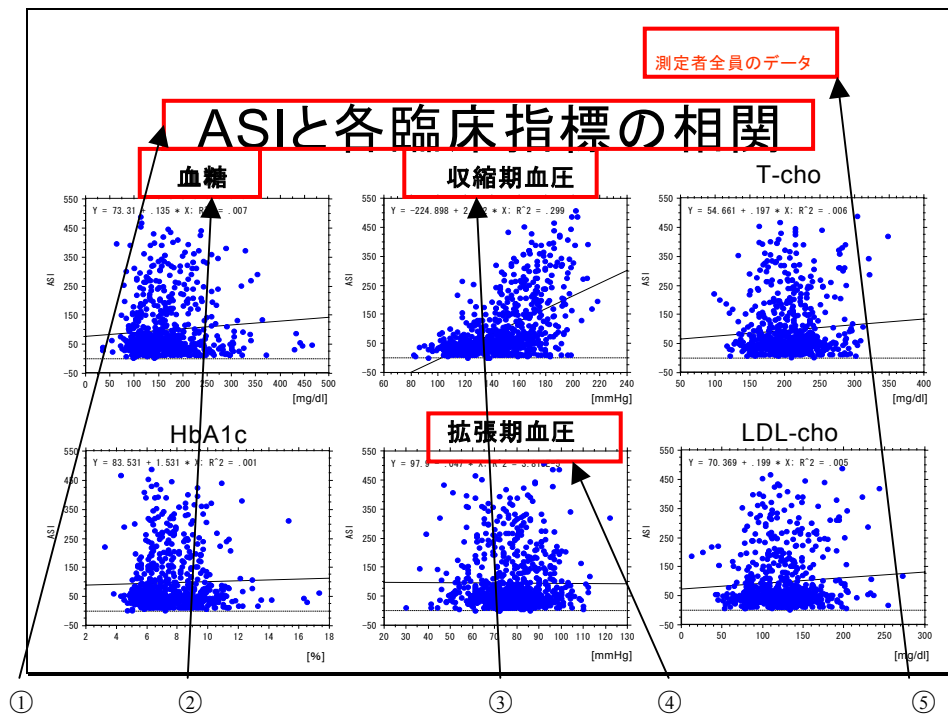
ASI正常・異常群の各指標

	正常群	異常群	
④ → 収縮期血圧	140±22	162±23	P<0.001
⑤ → 拡張期血圧	77±12	81±14	P=0.045
T-CHO	199±34	215±44	P=0.02
LDL-CHO	118±30	137±40	P=0.004
HDL-CHO	54±17	53±13	n.s
TG	137±84	128±64	n.s
HbA1c	7.8±1.8	7.6±1.3	n.s
⑥ → DM罹病年数	10±8.4	13±8.5	P=0.035
BMI	24.3±16.0	24.3±3.2	n.s

English

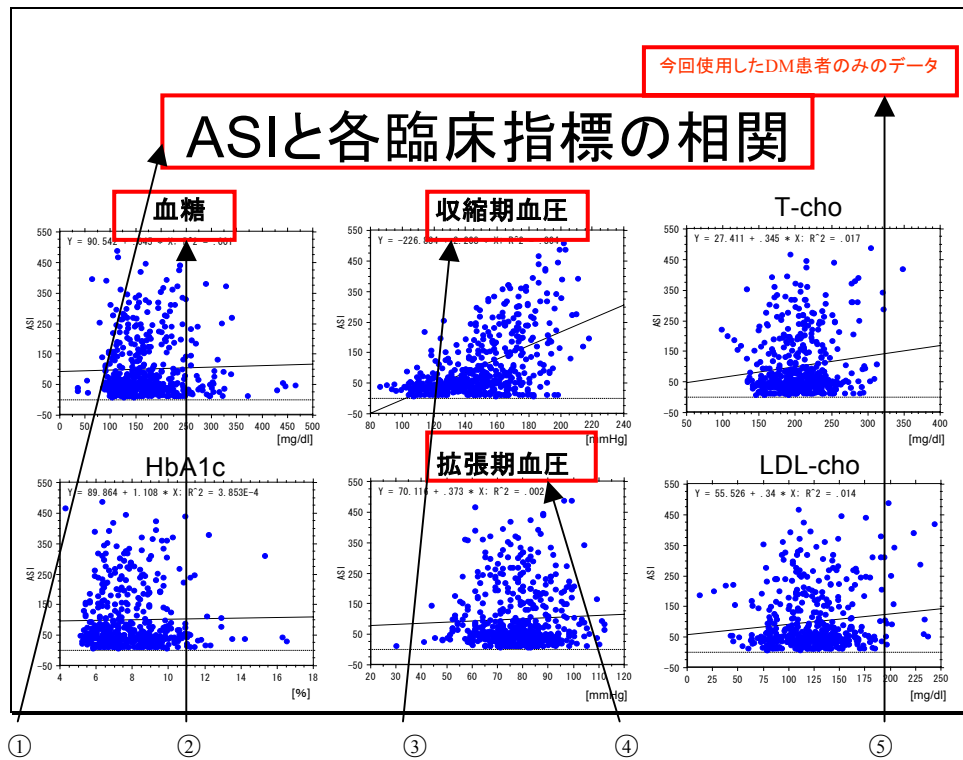
- ① Index for each ASI normal group/abnormal group
- ② ASI normal group
- ③ ASI abnormal group
- ④ Systolic blood pressure
- ⑤ Diastolic blood pressure
- ⑥ Number of years for which disease has been contracted

Slide 1



English

- ① Correlation between ASI and each clinical index
- ② Blood sugar
- ③ Systolic blood pressure
- ④ Diastolic blood pressure
- ⑤ Data for all measurement recipients



English

- ① Correlation between ASI and each clinical index
- ② Blood sugar
- ③ Systolic blood pressure
- ④ Diastolic blood pressure
- ⑤ The data for DM patients used (in this study)