

A Comparison of the Arterial Stiffness Index and Carotid Artery Echo Diagnosis in Diabetes Patients

Third Department of Internal Medicine, Tokyo Medical University School of Medicine, Kyorin University Department of Health Sciences, Tokyo Metropolitan Ebara Hospital, Department of Internal Medicine, Department of General Medicine, Kyorin University School of Medicine

Takashi Kobayashi¹, Takashi Miwa¹, Keiichiro Harashima², Yukiko Aoki¹, Akiko Tanaka¹, Yuno Takahashi¹, Akira Kanazawa¹, Jin Soeda³, Masao Kanazawa¹, Yoko Notoya¹, Hideaki Shimazu², Junichi Hayashi⁴, Toru Hayashi¹

Presented at the Japan Diabetes Society, May 2002

Objective:

In this study, we compared measurements of diabetes subjects using the CardioVision (distributed by IMDP, USA), which returns results as an Arterial Stiffness Index (ASI), and the Carotid Artery Echo.

Subjects and Method:

117 Type 2 Diabetes outpatients participated in this study (65 male, 52 female). The average age of subjects was 61. ASI measurement of each subject was repeated 3 times. The Carotid Artery Echo returned an IMT maximum value and a plaque score.

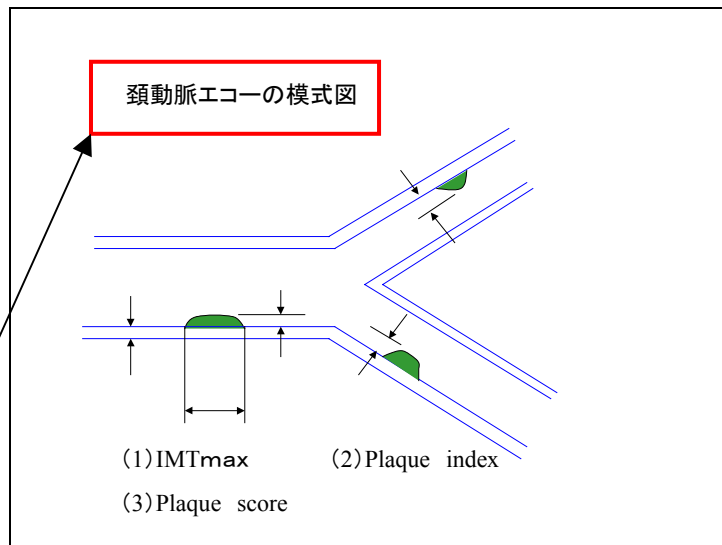
Results:

The diabetes patient group's average ASI of 86 was significantly higher than the non-diabetes patients' average ASI of 41. A correlation with high blood pressure was recognized (with the ASI), but the Carotid Artery Echo revealed no significant correlation.

Observation:

The ASI exhibits a high sensitivity for measuring the elastic modulus of the arterial wall tunica media. There is a significant possibility that the ASI will surpass and replace the Carotid Artery Echo and other similar devices as the standard. The CardioVision is both compact and easy to operate and is suitable for frequent measurement. It may also be considered as a highly useful tool for multifaceted investigation of arterial stiffness in diabetes patients.

slide 5



English

Carotid Artery Echogram schematic

slide 6

	② 平均値	③ ASIとの相関係数	
	IMTmax	1.15	0.152
			<u>P=0.03</u>
④	プラークインデックス	11.44	0.109
			<u>P=0.037</u>
⑤	プラークスコア	3.846	0.085
			N.S.

English

- ① Correlation between carotid artery echogram and ASI
- ② Average Value
- ③ ASI and the carotid artery echogram's correlation coefficient
- ④ Plaque index
- ⑤ Plaque score

slide 9

① 正常群・異常群の各指標			
	② 正常群	③ 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