

We utilize the FMD test for coordination of clinics and hospitals Helping to Detect and Treat Cardiovascular Disease



NAKAYAMA CLINIC

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We aim to be a home doctor that everyone in the community can rely on. Our specialty is the diagnosis and treatment of cardiac disease and lifestyle-related diseases such as hypertension, diabetes, and dyslipidemia. We also offer outpatient smoking cessation services and diabetes care by a Japan Diabetes Care Instructor.

I can provide consultation for a various diseases of internal medicine, but as a specialist, I am confident in advising appropriate treatment for cardiac disease, which I have cultivated over many years of clinical experience in the Department of Cardiology at Saitama Red Cross Hospital.

We have introduced the UNEXEF 18VG to perform the FMD test at this clinic. By utilizing the FMD test, we are helping to detect and treat cardiovascular diseases at an early stage.

The FMD test is a milestone for recommending a thorough examination.

We have been offering tests for atherosclerosis such as carotid IMT and CAVI, but we introduced the FMD test as well in 2014.

The purpose of the FMD test is to have patients at risk for coronary artery disease take a thorough examination if necessary as soon as possible.

In particular, diabetic patients often do not complain of pain, and often suffer from coronary artery disease without subjective symptoms.

After careful consideration of the possibility of finding high risk patients for coronary artery disease among diabetic patients, I decided to introduce the FMD test.

Prior to opening my own practice, I had long been involved in testing and treatment for coronary artery intervention as a hospital physician. After opening my own practice, I have been referring patients who are diagnosed as needing coronary artery intervention to specialized hospitals.

To do so, it was necessary to distinguish the presence or absence of coronary artery disease risk. However, whether or not there is coronary artery disease risk in patients who do not complain of symptoms, such as diabetic patients, cannot be determined by ECG alone, even with symptoms, and I was seeking other effective indicators.

It was during that time that I came across UNEXEF at a conference exhibition.

Low FMD value in patients with diabetes mellitus with poor glycemic control (metabolic memory) over a long period of time may indicate cardiovascular lesion.

Using test data from 780 patients who had undergone the FMD test at our clinic as of September 2015, we categorized patients by disease (diabetes, dyslipidemia, hypertension, and coronary artery disease) and performed an analysis.

The result of analysis showed significantly lower FMD values in patients with combined diseases compared to the FMD values in patients with single diseases (excluding coronary artery disease).

This indicated that FMD was lower in patients with other risk factors than in diabetes alone, and that FMD tended to be lower in patients with coronary artery disease in most cases. Therefore, we recommended that patients with diabetes mellitus who had poor glycemic control should undergo a thorough examination including coronary artery CT.

Furthermore, it was inferred that comprehensive treatment with multifactorial intervention from early onset is desirable to prevent cardiovascular complications of diabetes mellitus.

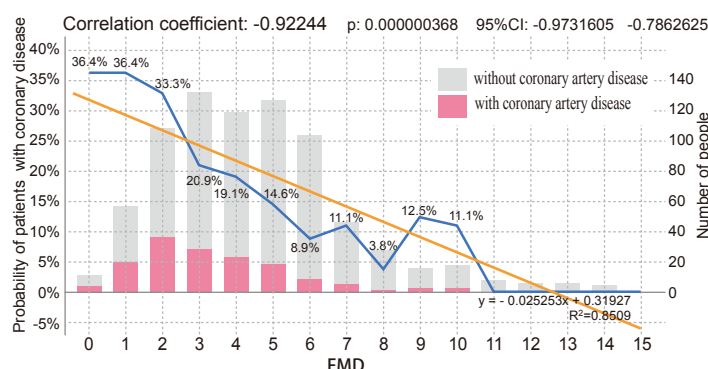


Figure 1 Number of patients and probability of patients with coronary disease by FMD

Effective Utilization Example of UNEXEF

Cases in which the FMD test led to coronary artery bypass surgery

For patients, the hurdle to take the FMD test, which is an indicator of systemic atherosclerosis, is low, and the results are simple and easy to understand.

Carotid IMT is said to be the gold standard for coronary events, but for patients, the FMD test (reimbursement 200 points) is less expensive than IMT and takes only 15~20 minutes. Since no blood is drawn, there is no pain, and patients readily accept the test when I ask them, 'Would you like to have an arteriosclerosis test?'

If needed detail information of the heart, it requires thorough examinations at a large hospital, such as a coronary CT or catheterization. It is difficult to convince a patient with no symptoms to undergo such a thorough examination.

In such cases, we show the results of the FMD test and explain the coronary artery risk to the patient so that he or she understands the need for a thorough examination.

In fact, there have been many cases in which the results of the FMD test have led to PCI or coronary artery bypass surgery.

In diabetic patients with low FMD values, considering total risk factors such as blood pressure, lipids, smoking, and family history, the possibility of angina pectoris or myocardial infarction is often considered even if no symptoms or ECG abnormalities are observed.

FMD test can be performed without any hassle

Our medical technologist is in charge of the FMD test. On average, they perform 2 to 3 FMD tests per day, and each test takes about 15 to 20 minutes. The technologist currently also in charge of echocardiography says, "I learned how to operate the UNEXEF18VG from the previous technologist, but I never felt any difficulty." We collaborate within the clinic for the benefit of our patients and have received high praise from many patients who have undergone the test.

Case presentation in which FMD was useful

Age 61, Male (regular visit for hypertension)
 Height 168.7cm Weight 77.8kg
 BMI 27.3
 HDL46mg/dL LDL108mg/dL
 TG189mg/dL
 HbA1c 6.2%
 No ECG abnormality upon physical check-up

One of our hypertensive patients had an FMD value of 1.0% (Figure 2).

The patient had no cardiac symptoms, but her mother had a history of myocardial infarction and in consideration of his family history, we explained the necessity of a coronary artery examination at the hospital and had him undergo a catheterization.

As a result, three-vessel disease was found (Figure 3), and the patient underwent coronary artery bypass surgery at a nearby university hospital. The patient was grateful to us for understanding that he might have died suddenly if he had not undergone the FMD test at our clinic.

We believe that the FMD test is a useful coronary screening test for diabetics and other patients at risk for coronary artery disease who do not complain of symptoms.

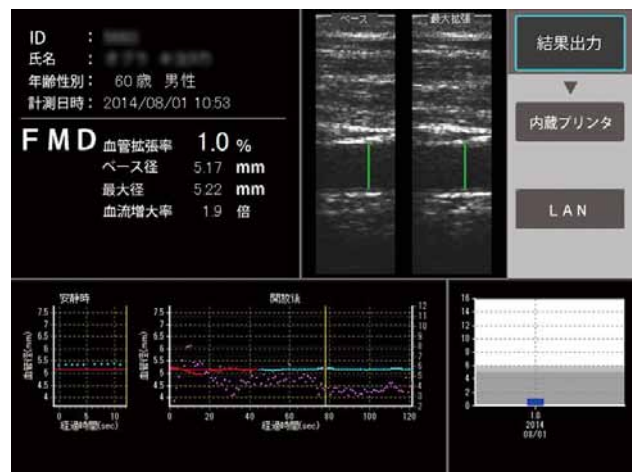


Figure 2 FMD

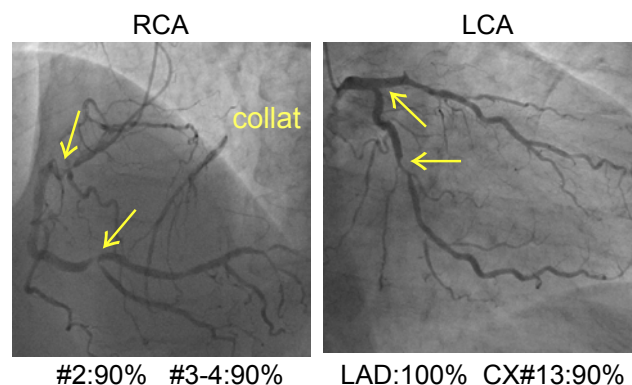


Figure 3 Coronary angiography