

## 驚くべき心臓の所見が将来のリスクを予測する (ESC2015 Presentation # 1164)

DOPPLER-CIP: 左室拡張末期容積の減少および左室心筋重量は将来の心不全を予測する可能性がある

DOPPLER-CIP: Small left ventricular end-diastolic volume and left ventricular mass may predict future heart failure

慢性虚血性心疾患の患者において、壁肥厚を伴い左室容積が小さいことは、一般的に心不全への最初の段階であると考えられている形態学的リモデリングの最強の予測因子であるとの予期せぬDOPPLER-CIPトライアルの結果が、2015年ESC Congressホットラインセッションで発表された。このトライアルは異なる非侵襲的方法を比較し、ベースラインにおいて2年後の心臓リモデリングのリスクを予測する最も有用な方法を検討した。研究者らは慢性虚血性心疾患が疑われる患者676人を対象とした。ベースライン時の評価後、全ての患者が医師らの裁量で血行再建術、部分的血行再建術、または薬物治療などの最良の、ガイドラインに基づく治療を受けた。2年後、対象の約20%がMRIまたは心エコー検査の結果、心リモデリングの所見を示した。ベースライン時におけるリモデリングの最善の予測因子は、左室拡張末期容積(LVEDV)およびLV重量(LVM)などで計測される左室サイズであった。ベースライン時にLVEDVが小さい(<145mL)とリモデリングの確率が25~40%であり、それよりLVEDVが大きい場合の確率の方が低かった(20%;  $p<0.001$ )。リモデリングリスクはまた壁厚が厚い場合にも高かった( $p=0.003$ )。これらの結果は、安定冠動脈疾患患者のリスク層別化を完全に変化させ得る、と筆者らは述べている。

### Full Text

In patients with chronic ischemic heart disease, a small left ventricle with thick walls, is the strongest predictor of morphologic remodeling, which is generally considered a first step towards heart failure, according to unexpected findings presented at ESC Congress 2015.

Results of the DOPPLER-CIP (which stands for "Determining Optimal non-invasive Parameters for the Prediction of Left Ventricular morphologic and functional Remodeling in Chronic Ischemic Patients") study were not expected and, if confirmed by other studies, "could completely change risk stratification among patients with stable coronary artery disease," according to the study coordinators Frank Rademakers, MD and Jan D'Hooge, Ph.D..

"We were indeed surprised by these findings," said the investigators, who are from the University of Leuven, Belgium. "The general belief is that larger ventricles with thin walls (a typical 'infarct ventricle') would be at higher risk of remodeling, with a possible explanation for this being that there is increased wall stress in such hearts. But our findings show that it is actually small hearts with thick walls that are more at risk. As this goes against general belief, we have checked and re-checked our data, and analysis, and have run several consistency tests, but they all led to this same conclusion."

There are currently no guidelines for assessing a patient's risk for this type of deterioration, they noted.

DOPPLER-CIP compared different non-invasive methods to determine the most useful tool at baseline for predicting risk of cardiac remodeling two years later.

The study included 676 patients, from 6 European countries, with suspicion of chronic ischemic heart disease.

The patients underwent standard diagnostic tests at baseline including: electrocardiogram (ECG), exercise testing with continuous ECG monitoring, and measurement of maximal oxygen uptake (VO<sub>2</sub>max), as well as blood sampling and quality of life assessments. In addition to these standard tests, patients also underwent at least two stress imaging tests including echocardiography (ECHO), magnetic resonance imaging (MRI) and/or single positron emission computed tomography (SPECT) stress test, stress ECHO and stress MRI.

After these baseline evaluations all patients received optimal, guideline-based treatment including revascularization, partial revascularization, or pharmacologic treatment at their physician's discretion.

At the end of the study period, about 20% of the subjects had evidence of cardiac remodeling based on MRI or ECHO results, with the best baseline predictors of this remodeling being left ventricular size measured as the "left ventricular end-diastolic volume" (LV EDV) and left ventricular mass (LVM).

Specifically, a small LV end-diastolic volume (< 145 ml) at baseline had a 25-40% chance of remodeling, compared to a larger EDV, which had a decreased risk (20%;  $p<0.001$ ) with risk also increasing with increasing wall thickness. ( $p=0.003$ ).

"By identifying baseline LV EDV and LVM – measurements that can easily be assessed with standard imaging – as the best predictors of future remodeling and potentially heart failure risk, our study could guide clinicians away from more expensive tests for risk assessment," they said.

The study was funded by the EU (FP7) framework program (DOPPLER-CIP; grant number 223615). Logistical support (software tools for data analysis) was provided by Philips Healthcare, GE Healthcare, TomTec Imaging Systems, MedViso and Bracco Imaging. Dr. D'Hooge disclosed research funding from Philips, research contracts with GE, and a collaboration with MedViso. Professor Rademakers had no disclosures.

## Conference News

### [News 01]

治療抵抗性高血圧にはスピロラクトンが最適である

### [News 02]

持続性心房細動を止める

### [News 03]

急性MIにおける早期アルドステロンブロック

### [News 04]

迅速でより感度の高い検査は胸痛患者のトリアージを迅速にする

### [News 05]

驚くべき心臓の所見が将来のリスクを予測する

### [News 06]

抗血小板薬2剤併用療法継続期間に関する論議

### [News 07]

中枢性睡眠時無呼吸症用デバイスは心不全の死亡率を上昇させる

### [News 08]

実臨床においてリバーロキサバンは安全性および有効性試験をパスした

### [News 09]

発作性心房細動におけるカテーテルアブレーションの優位性

### [News 10]

ARBはCVDバイオマーカーにより影響を及ぼす可能性がある

### [News 11]

生体吸収性ステントはメタルステントと同等に好ましい

### [News 12]

胸痛とうつ病は共通の神経化学的経路を有する可能性がある

### [News 13]

心疾患に対するうつ病と血圧の相乗効果