

# CORONARY MICROVASCULAR DYSFUNCTION (CMD) COULD BE THE CAUSE OF YOUR PATIENTS' PERSISTENT CHEST PAIN



## What is CMD?<sup>1</sup>

Coronary Microvascular Dysfunction (CMD) is characterized by abnormalities with the small blood vessels that is largely responsible for regulation and distribution of blood flow to the heart.

## Patient Symptoms of CMD<sup>1,2</sup>:

- Chest pain, squeezing or discomfort (angina), which may worsen during daily activities and times of stress
- Discomfort in the left arm, jaw, neck, back or abdomen associated with chest pain
- Shortness of breath
- Tiredness and lack of energy

## Other warning signs of CMD may include<sup>3</sup>:

- Persistent angina (chest pain)
- A negative stress test but still suffering from angina
- Persistent angina after receiving stent(s) for coronary blockages
- Diagnosed with indigestion but have found no relief for symptoms

## What are the risk factors for CMD?<sup>2,4</sup>

Experts believe the causes of CMD are the same as for disease of the larger vessels of the heart, such as high blood pressure, high cholesterol, obesity and diabetes.

CMD is more common in women. However, it affects both men and women especially if they have the following risk factors:

- Unhealthy blood cholesterol levels
- High blood pressure
- History of smoking
- Diabetes
- Overweight and obesity
- Inactivity
- Unhealthy diet
- Older age
- Family history of heart disease

1. Taqueti VR, et al. Coronary microvascular disease pathogenic mechanisms and therapeutic options: JACC state-of-the-art review. *J Am Coll Cardiol.* 2018;72:2625–2641. 2. Mayo Clinic. “Small vessel disease” article accessed on 4/05/2022 at: <https://www.mayoclinic.org/diseases-conditions/small-vessel-disease/symptoms-causes/syc-20352117> 3. Kunadian V, et al. An EAPCI Expert Consensus Document on Ischaemic with Non-Obstructive Coronary Arteries in Collaboration with European Society of Cardiology Working Group on Coronary Pathophysiology & Microcirculation Endorsed by Coronary Vasomotor Disorders International Study Group. *European Heart Journal.* 2020; 0:1-21. 4. American Heart Association. “Coronary Microvascular Disease” article accessed on 4/05/2022 at: <https://www.heart.org/en/health-topics/heart-attack/angina-chest-pain/coronary-microvascular-disease-mvd.2015>

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## How is CMD diagnosed?

An interventional cardiologist can perform tests to determine the cause of your patients' symptoms. A new tool for CMD allows detection of invisible blockages in the heart's smallest vessels. During the diagnostic procedure, a small wire is placed in the arteries in order to measure the resistance in blood flow due to the microcirculation.<sup>1</sup>

## How is CMD treated?

CMD can be treated with medications and/or lifestyle changes to control risk factors and reduce symptoms.<sup>2</sup> Having the correct diagnosis for your patients' chest pain will allow optimized medical therapy to improve patient's quality of life.<sup>3</sup>

**If your patients have been suffering from persistent chest pain, talk to an interventional cardiologist about PressureWire™ X Guidewire and Coroflow™ Cardiovascular System, a solution that can help with diagnosis for CMD.**

1. American Heart Association. "Coronary Microvascular Disease" article accessed on 4/05/2022 at: <https://www.heart.org/en/health-topics/heart-attack/angina-chest-pain/coronary-microvascular-disease-mvd>. 2015 2. Kunadian V, et al. An EAPCI Expert Consensus Document on Ischaemic with Non-Obstructive Coronary Arteries in Collaboration with European Society of Cardiology Working Group on Coronary Pathophysiology & Microcirculation Endorsed by Coronary Vasomotor Disorders International Study Group. *European Heart Journal*. 2020; 0:1-21. 3. Ford TJ, et al. 1-year outcomes of angina management guided by invasive coronary function testing (CorMicA). *J Am Coll Cardiol Intv*. 2020;13:33-45.

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### Abbott International BVBA

Park Lane, Culliganlaan 2B, 1831 Diegem, Belgium, Tel: 32.2.714.14.11

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