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NEWSLETTER

JANUARY TO MARCH 2022

(Issue 7 - Page 1)

WELCOME

IT IS A PLEASURE to welcome everyone to the 2022 Spring edition of the INOCA International Newsletter!

A great deal has happened since the Christmas edition so we have a lot to catch up on and a lot to share with you!

First of all a huge thank you to all the Medical Advisory Board members who took time out of an already very busy schedule to record our Christmas and New Year Messages of Hope for patients.

These messages were so well received and showed yet again the commitment and determination of our Medical Advisory Board members to continue to raise awareness and further eduction in INOCA and to also advocate for and support patients wherever and whenever possible.

The world has certainly come a long way with regard to understanding INOCA, but we are not there yet and there is still much to do, so I am sure you will all agree that knowing we have such an expert, knowledgeable and supportive Advisory Board behind us makes a huge difference!

If you would like to view the Christmas and New Year Messages of Hope, just click on the link below. (This link will be open for viewing until the end of April 22)
https://inocainternational.com/inoca-insights/

PROFESSOR MARTHA GULATI

INOCA INTERNATIONAL are delighted to welcome Professor Martha Gulati to their Medical Advisory Board.

Professor Gulati is known around the world for her knowledge and expertise in womens heart health. She is also highly regarded for driving forward change and for advocating for improvement in the very under recognised and under diagnosed conditions of INOCA.

Professor Gulati recently led on the U.S. Chest Pain Guidelines - a very welcome document for INOCA patients as it included INOCA conditions under 'known heart disease' and proposed that the term 'Atypical' chest pain no longer be used.

Professor Gulati is a very welcome addition to our superb Medical Advisory Board and is already working on a number of projects with us.

Our Medical Advisory Board members are certainly not just a poster on the wall of INOCA! They all work very hard on behalf of INOCA patients everywhere and have not once complained at the sometimes considerable amount of time they are asked to spend helping INOCA patients!

CONNECT WITH US

www.INOCAInternational.com
(or use the QR Code above right)

For our Facebook Information Page
https://www.facebook.com/groups/491395198372627

We also have a Twitter page
https://twitter.com/InocaInternati1

Instagram TikTok

Private INOCA Case Discussion Group and Resource Centre for Doctors
MedShr.it/INOCA

IN THIS ISSUE

An INOCA International special publication which, when considered appropriate, will be issued alongside the INOCA International Newsletter to highlight recent research, papers, journal articles and publications about INOCA, with dedicated narratives from the authors themselves.

Check out the latest issue of **INOCA INNOVATIONS** in this Newsletter!

2021 INOCA PATIENT SURVEY

2021 saw the launch of the first ever INOCA International Patient Survey. Leading on this amazing project was **Professor Noel Bairey Merz** and **Professor Martha Gulati**. We are very much looking forward to bringing you the results of the survey as soon as this is possible! Meanwhile, a huge thank you to Professor Noel Bairey Merz and Professor Martha Gulati for being such a pleasure to work alongside and for their expertise and experience on this project! We would also like to offer our sincere thanks to the members of our Medical Advisory Board who are contributing to the Survey paper and to all those patients who took part in this groundbreaking survey.

Another superb collaboration from our Patients and our Medical Advisory Board members!

MEDSHR

Are you a Doctor? Have you joined our private INOCA Case Discussion Group on MedShr yet?
MedShr.it/INOCA

INOCA PODCAST

The response to our upcoming podcasts has been fantastic! Our podcasts will be bite-sized audio files that you will be able to listen to at a time to suit you. On your way to work, having a coffee, sitting on the train, in between appointments or doing the housework, just whenever is most convenient to you! We will be announcing the launch date soon, so please make sure you are registered on the INOCA International Information page, on our Twitter page and that you are also on our newsletter mailing list to keep up to date!

INOCA ON TIKTOK AND INSTAGRAM

We were delighted to announce the launch of INOCA International onto the Instagram and TikTok platforms. This enables us to reach a much wider audience and we hope that this will also allow us to reach INOCA patients sooner and to lower the number of years patients have symptoms and the length of their journey to diagnosis.

Not every platform is suitable for everyone, so pease just choose the platform that you are most comfortable with.

INOCA INFOCARDS

Our INOCA International INFOCARDS are already proving very popular! They are a perfect size for handing out to patients, doctors, nurses, care teams and also to friends and family. They give easy to access QR's and links to help find out more about INOCA conditions.

INOCA ON TWITTER

@INOCAInternati1

We want to take a moment to acknowledge and recognise the support of our superb Twitter family!

With almost 3,000 followers, who are mostly cardiologists, we have a large support network who regularly share and like our tweets and who are very much a part of raising awareness and furthering understanding in INOCA.

"THANK YOU to all of you!"

INOCA ON FACEBOOK

INOCA International also have a dedicated Facebook Information Page. Unlike support pages, this page is public and is open to everyone. You can join the page here - www.facebook.com/groups/491395198372627

For those in need of more support, INOCA International link to an excellent online support group with a very friendly and very welcoming membership. You can join the support group here - www.facebook.com/groups/287960691855039

N.B. Nothing in this newsletter should be considered in any way as advice or recommendation. All information contained in this newsletter is an opinion only and is shared here only in the hope that is it of interest to other patients and medical professionals. Always consult your own medical practitioner before trying any new medications or therapies and before changing any of your current routines.

ARE WE WHAT WE EAT?

Dr Ailsa Care

Actually we are more likely what we digest and absorb as these processes are what give us the raw materials for cell growth, repair and biochemical processes. Unless you digest your food fully you cannot absorb the building blocks for cell repair or vitamins and minerals needed as co-factors for hundreds of biochemical reactions. Also if our food is not fully digested not only are we more likely to develop food allergies or sensitivities but there is then more substrate/food for unhealthy microbes in the gut to ferment resulting in bloating, flatulence, abdominal pain and altered bowel habit. This is why we should pay digestion more attention and be more mindful of what and how we eat. It all follows on from my previous articles about breathing and vagus nerve function. Who would have thought all these functions are connected.

Not many people realise that digestion actually starts with the brain! Just the thought, sight and smell of food sends messages to your stomach and gastrointestinal tract that food is on the way and it needs to be prepared by releasing stomach acid, pancreatic enzymes and bile. So when you are preparing food be mindful of all your senses - sight, sound, touch, taste and smell to prime your gastrointestinal tract for healthy digestion. Just think how much more appetising does a colourful plate of salad and fish look rather than a bland processed meal which is all beige. Think of the sound the crunch of the raw cucumber and lettuce and the feel of it in your mouth.

Maybe you have added a sprinkling of fresh chopped parsley to the fish which you can smell. I'm sure you are getting the idea now! That vagus nerve I discussed in the last newsletter connects the brain and gut so that what happens in the brain affects the gut and vice versa. When there isn't enough stimulation from the brain to the vagus nerve all the other organs downstream are affected, including the digestive system. Conversely, poor digestion and issues with imbalanced bacteria in the gut can result in brain symptoms such as altered mood and brain fog. If you have a poorly functioning gut-brain connection here are 3 exercises which can increase the function.

Gut-Brain Exercises:

Gargling - take regular sips of water through the day and gargle. Contracting the muscles at the back of the throat activates the vagus nerve

Gagging - use the handle of a small spoon, your toothbrush or a tongue depressor to gently press on the back of your tongue just enough to activate your gag reflex, do this twice a day morning and evening.

Sing loudly or hum - this works the muscles of your throat and encourages you to breathe more deeply which helps to oxygenate the body and brain.

Digest-Best Breathing:

Deep abdominal / diaphragmatic breathing activates the vagus nerve and parasympathetic nervous system. Your digestive system works optimally in a relaxed state. Everyone knows you are more likely to get indigestion when you eat when stressed or on the run!

Try taking 5 deep breaths before you eat. Inhale slowly through your nose to the count of 4, as you breathe in concentrate on your breath and draw it in towards your belly button. Hold the breath for the count of 4-7 (but not more) then slowly exhale through your mouth while counting to 8, contracting your abdominal muscles to completely empty your lungs. Repeat for a total of 5 cycles.

Chewing:

How many times do you chew your food before swallowing? Chewing serves several crucial functions in firstly breaking up the food so that there is a greater surface area for stomach acid and digestive enzymes to work on, secondly to mix food with saliva which contains some amylase (a digestive enzyme) which starts to break down carbohydrates and thirdly to send signals to the stomach to prepare for food coming.
Count how many times on average you chew now, try to gradually increase the number of times you chew, aiming to have the food broken down into an unrecognisable mush. One sign that you are not chewing properly is if you see undigested food in your stool.

ARE WE WHAT WE EAT

Stomach acid:
Stomach acid breaks down protein and creates a very acidic environment in the stomach which is required to kill invading microbes (either taken in in food or ascending from lower down the gut) and to absorb some vitamins and minerals.

I commonly see patients who have low protein levels on blood testing along with nutritional deficiencies because they have inadequate stomach acid.

Low stomach acid has a knock on effect on the production of pancreatic enzymes needed for the digestion of protein, carbohydrates and fats. Also low stomach acid results in reduced gallbladder contraction which may cause poor digestion of fats. There needs to be a low enough pH in the partially digested food arriving in the first part of the small intestine to trigger the release of enzymes from the pancreas.

Symptoms of low stomach acid include: bloating, belching, burning and flatulence after meals, a sense of fullness after eating, indigestion, diarrhoea or constipation, multiple food sensitivities, acne, rosacea, chronic candida infections.

If you think you may have low stomach acid you should seek advice from your GP, nutritional therapist or functional medicine doctor.

If you are taking acid suppressing medications such as omeprazole, lansoprazole, esomeprazole you should not stop them without medical advice.

It is amazing the difference that just improving the digestive process can make.

"Let the small changes make a big difference"

PATIENT STORIES

We have been delighted to record a number of new patient videos during the last few weeks, so these will be appearing on our website soon. To view our Patient Videos, please click on the link below -
www.inocainternational.com/inoca-insights

GO RED FOR WOMEN

PATIENT FUNDRAISING

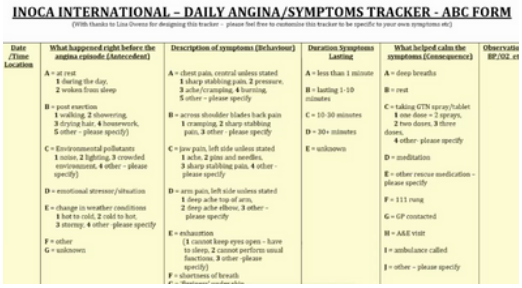
Throughout the last 2 years and throughout COVID we have seen a number of INOCA patients continue to fundraise and to make donations to INOCA International via the Patients GoFundMe page. GoFundMe is the world's largest social fundraising platform, with over £10 billion raised from more than 120 million donations. GoFundMe also offers the industry's first and only donor protection guarantee. Just two of the reasons why INOCA International are happy to see donations being received, processed and managed by this trusted global platform. We made the decision not have a donation button on our website as we do not feel this is appropriate, especially in the current very difficult financial times for many, but if If you are in a position to make a donation to help INOCA International to continue raising awareness and furthering understanding, it would be very much appreciated and can be made on the link below -
www.gofundme.com/f/1qrjhqrm00

SYMPTOM TRACKER

Back by popular demand is the INOCA International Symptoms Tracker. Ths tracker was created by an INOCA patient and is increasingly being used by patients and recommended by Doctors. The Symptoms Tracker is is an excellent way to identify trends and triggers!

The tracker is free to download from our website - if you wold like to try it out, here is the link!

Inocainternational.com/patient-information/


INOCA INTERNATIONAL – DAILY ANGINA/SYMPTOMS TRACKER - ABC FORM

MOTHERS DAY IN THE UK

For anyone who might have missed it, we have included our Mothers Day message for all those wonderful Mothers out there!

To all the Mothers we know

To Grand Mothers
and to Great Mothers

To Mothers with children
and Mothers in waiting

To the future Mothers
and the should be Mothers

To Mothers who yearn
and to Mothers who grieve

Today we recognise YOU
and the amazing gift you are
to the children in your heart

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COFFEE TIME THOUGHTS

DID YOU KNOW...

Cardiovascular Disease accounts for around 35% of deaths in women each year. This is more than all cancers combined!

Did you know that around 50% of patients being sent for a clinically indicated angiogram do NOT have blockages in their coronary arteries, but may continue to have angina symptoms?

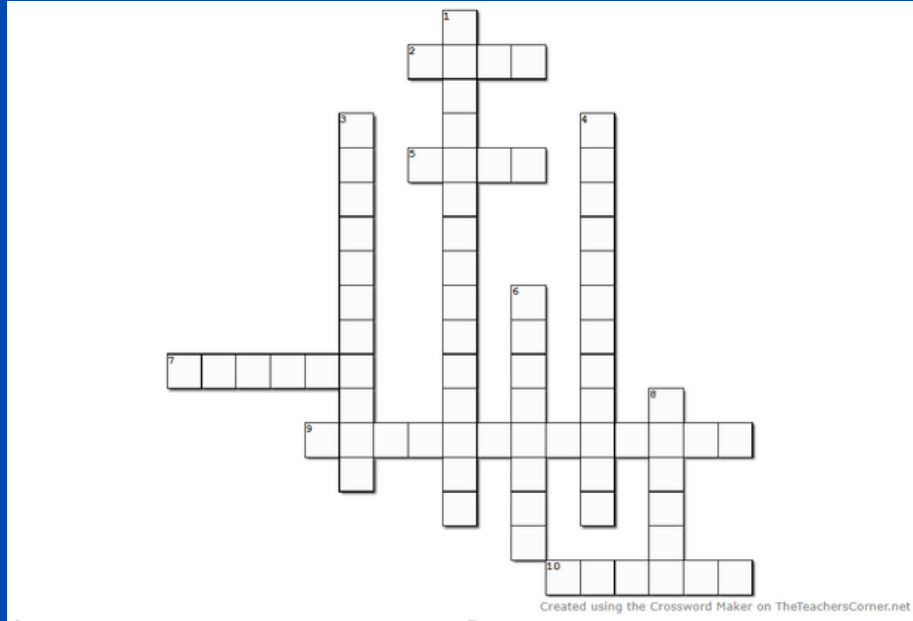
INOCA is far more prevalent than was first thought

INOCA is not benign

INOCA needs further research

INOCA needs clearer teaching and greater understanding in the medical community and in clinical practice

Guidelines need to include clear and specific pathways for INOCA patients to prevent years of undiagnosed symptoms



Created using the Crossword Maker on TheTeachersCorner.net

Across

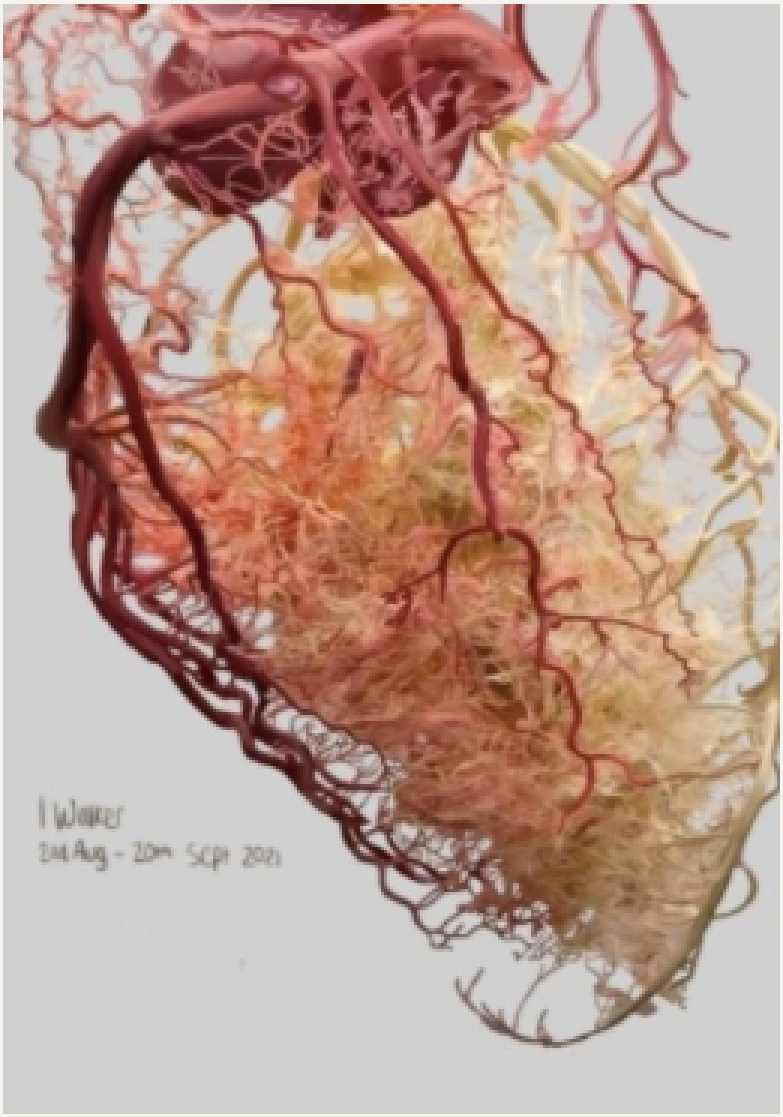
2. In the UK how many fruits and vegetable portions should you aim to have a day?
5. What heart healthy food rhymes with rail?
7. What fruit is more commonly thought of as a vegetable?
9. Which diet does the British Heart Foundation recommend for overall heart heath
10. What vegetable used to be purple before the more recognised orange colour became popular?

Down

1. Which person connected to the British Royal family wrote a Heart Healthy cookbook in 2016?
3. What white vegetable do people sometimes make 'rice' from?
4. These vegetables are good at sprinting!
6. Which food is red and really good at raising nitrates in the blood?.
8. What vegetable comes in different colours and is also the name of a spice?

Search for words relating to food

INOCA INNOVATIONS



(Image courtesy of Issy Walker)

The special publication issued alongside the

INOCA International Newsletter

Highlighting recent research, papers, journal articles and publications chosen by INOCA International, with dedicated narratives from the authors themselves.

OPEN ACCESS

Invasive coronary physiology in patients with angina and non-obstructive coronary artery disease: a consensus document from the coronary microvascular dysfunction workstream of the British Heart Foundation/National Institute for Health Research Partnership

Divaka Perera [1], Colin Berry [2,3], Stephen P Hoole,[4] Aish Sinha,[1] Haseeb Rahman,[1] Paul D Morris [5], Rajesh K Kharbanda [6], Ricardo Petraco,[7] Keith Channon [6], UK Coronary Microvascular Dysfunction Working Group

Dr Aish Sinha speaks to INOCA International about their group's recent publication

Nearly half of all patients presenting to the catheter laboratory with angina have no significant narrowings in the blood vessels (arteries) suppling their heart muscle. This is called angina with non-obstructed coronary arteries (ANOCA). ANOCA, or INOCA (ischaemia with non-obstructed coronary arteries), is an umbrella term comprising of several different conditions affecting both the large and small arteries supplying the heart muscle. All of these entities can lead to a blood supply/demand mismatch to the heart muscle under certain circumstances; this is experienced by patients as angina. Patients with INOCA tend to suffer from a poor health-related quality of life and are at an increased risk of adverse long term outcomes.

Coronary physiology assessment, in the catheter laboratory, allows the Cardiologist to assess their patients' coronary vascular function in detail, i.e. looking beyond narrowings in the large arteries. The UK-based BHF/NIHR CMD workstream is a network of Cardiologists with an interest in patients with INOCA, and this consensus document provides its readers with the practical know-how of carrying out these measurements in a standardised manner. We aim to promote the uptake of coronary physiology assessment in all catheter laboratories across the country so that our patients can receive timely diagnoses, which may help their ongoing management.

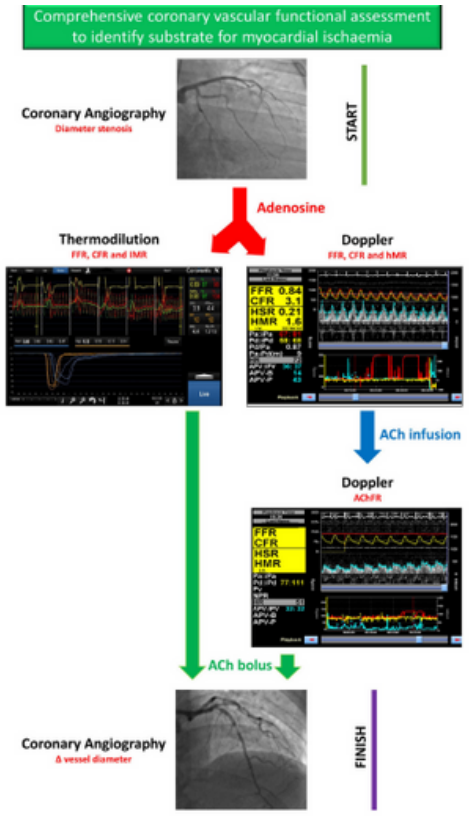
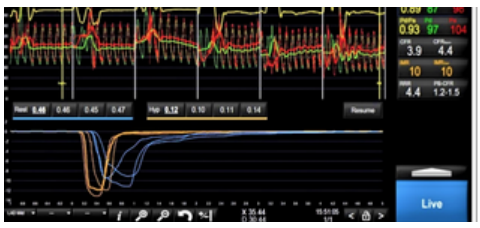


Figure 5 This figure represents our proposed algorithm for any patient coming to the catheter laboratory with symptoms suggestive of myocardial ischaemia who is found to have unobstructed epicardial arteries. AchFR, acetylcholine flow reserve; CFR, coronary flow reserve; FFR, fractional flow reserve; hMR, hyperaemic microvascular resistance; HSR, hyperaemic stenosis resistance.



Please click on the link for the full article https://heart.bmj.com/content/heartjnl/early/2022/03/21/heartjnl-2021-320718.full.pdf?ijkey=zCQz3hzTKPjbmIX&keytype=ref

> Circ J. 2021 Nov 9. doi: 10.1253/circj.CJ-21-0848. Online ahead of print.

Pathophysiology of Coronary Microvascular Dysfunction

Filippo Crea [1] [2], Rocco A Montone [1], Riccardo Rinaldi [2]

Affiliations + expand

PMID: 34759123 DOI: 10.1253/circj.CJ-21-0848

Dr Rocco Montone
speaks to INOCA International on
Pathophysiology of Coronary Microvascular Dysfunction

This review, just published in Circulation Journal, comes from Prof. Filippo Crea and his team, including Dr. Rocco A. Montone and Dr. Riccardo Rinaldi. In this review, the complex mechanisms underlying CMD are described in detail, including functional and structural alterations in the coronary microcirculation along with the underlying molecular mechanisms that, taken together, can reduce the coronary blood flow reserve and produce regional ischaemia even in the absence of any epicardial stenosis. Afterwards, an important section is dedicated to the specific pathophysiological pathways in relation to the presence of traditional cardiovascular risk factors and comorbidities (e.g.: type 2 diabetes mellitus, hypertension, dyslipidaemia, obesity and metabolic syndrome, female sex). Indeed, given the absence of specific therapies targeting CMD, the control of modifiable risk factors plays a critical role in the management of these patients.

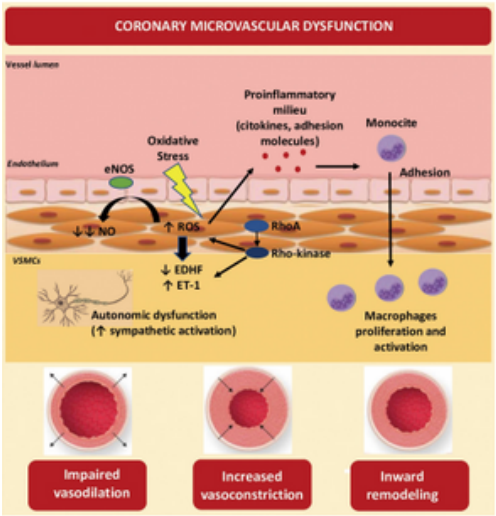
Finally, this review focuses on the mechanistic and prognostic role of CMD across the spectrum of cardiovascular diseases, including ischemia with non-obstructive coronary arteries as well as obstructive coronary artery disease, patients with myocardial diseases and valvular heart diseases, takotsubo syndrome, heart failure with preserved ejection fraction (the so-called "HFpEF") and iatrogenic CMD, along with a description of the mechanisms linking the development of CMD with the Coronavirus Disease 19 (COVID-19) infection.

The purpose of this review is to provide updated evidence in current understanding of the pathophysiological mechanisms of CMD. Indeed, the still limited knowledge of the mechanisms of CMD precludes specific therapeutic interventions and, therefore, gaining a deep insight in the pathophysiology of CMD in different clinical situations may pave the way for further research as well as the development of novel strategies based on a precision medicine approach.

Professor Filippo Crea

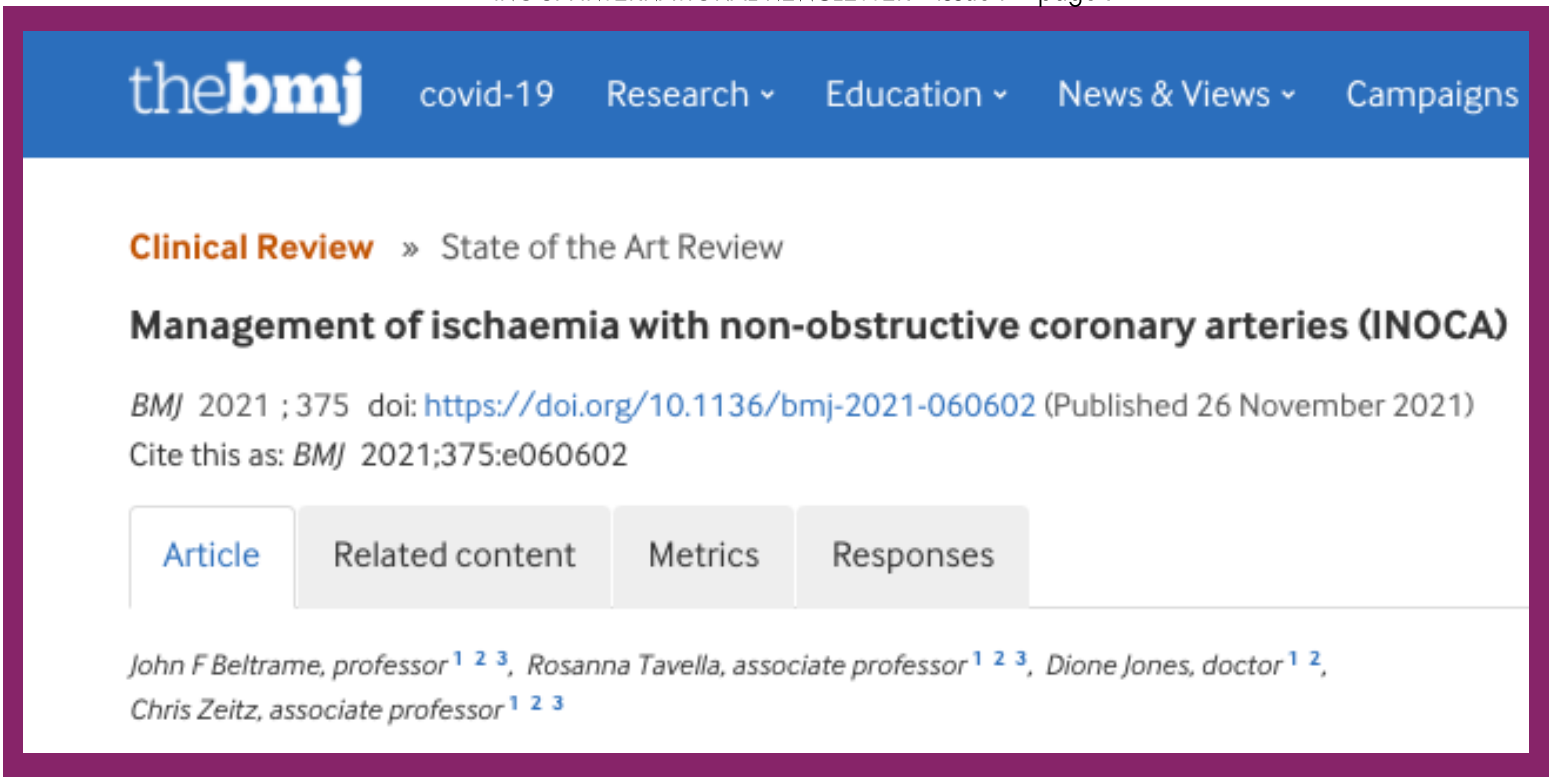
Dr Rocco Montone

Dr Riccardo Rinaldi



To view the full article please click on the following link -

https://www.jstage.jst.go.jp/article/circj/advpub/0/advpub_CJ-21-0848/_article



Professor John Beltrame

introduces his teams recent review on MINOCA

Patients with MINOCA account for approximately 5-10% of patients with an acute heart attack. Compared to patients who have myocardial infarction with obstructive coronary artery disease (MI-CAD), patients with MINOCA tend to be younger, less likely to have high cholesterol levels and women are over-represented. The cause of the heart attack in patients with MINOCA can include erosions of the coronary artery wall, coronary spasm or conditions associated with increased clotting risk. The 12-month prognosis in MINOCA is better than patients who have MI-CAD but not as reassuring as those who have not experienced a heart attack6.

Prior to the term 'MINOCA' being developed, patients with these clinical characteristics were considered as 'false positive' heart attacks (ie not 'real heart attacks'). Hence a common scenario experienced by these patients was being told in the emergency department they 'had experienced a heart attack and required a coronary angiogram' but when this was normal, they were typically told they 'hadn't had a heart attack'; clearly patients (and clinical staff) were often confused with their diagnosis.

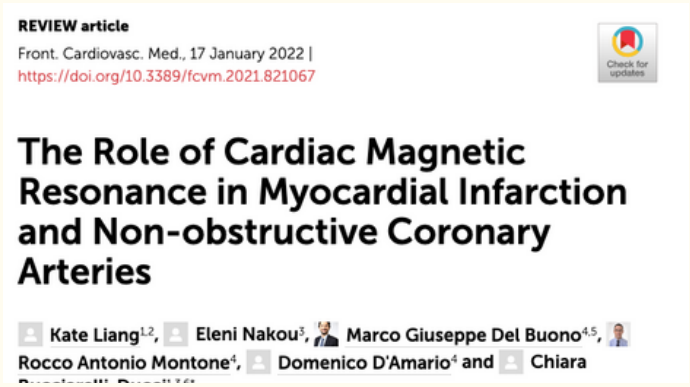
Introducing the term 'MINOCA' has achieved several important goals including (a) providing the patient with an established diagnosis, thereby recognising they have had a heart attack, (b) acknowledging the patient's prognosis is guarded but better than those with obstructive coronary artery disease, (c) emphasising that 'MINOCA is a working diagnosis' and that the underlying cause of the heart attack needs to be identified, and (d) enabling clinical research studies to be undertaken on this defined disorder.

With regard to the last goal, the first prospective clinical trial in MINOCA is currently in progress and seeks to determine if conventional cardioprotective agents used in MI-CAD are beneficial in patients with MINOCA7. This clinical trial and other research studies will continue to improve our understanding and management of MINOCA.

You can learn more from Professor Beltrame on the INOCA International website - https://inocainternational.com/inoca-matters/

Click below to read the full article www.bmj.com/content/bmj/375/bmj-2021-060602.full.pdf

Recent papers, journal articles and publications


REVIEW article

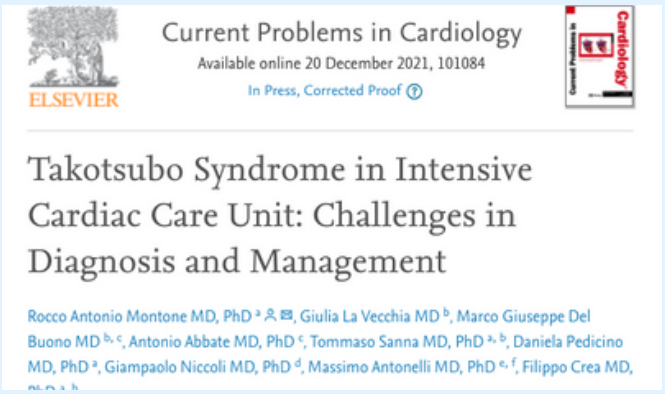
Front. Cardiovasc. Med., 17 January 2022 |
https://doi.org/10.3389/fcvm.2021.821067

The Role of Cardiac Magnetic Resonance in Myocardial Infarction and Non-obstructive Coronary Arteries

Kate Liang[1,2], Eleni Nakou[3], Marco Giuseppe Del Buono[4,5], Rocco Antonio Montone[4], Domenico D'Amario[4] and Chiara

https://www.frontiersin.org/articles/10.3389/fcvm.2021.821067/full

https://www.sciencedirect.com/science/article/abs/pii/S0146280621002929

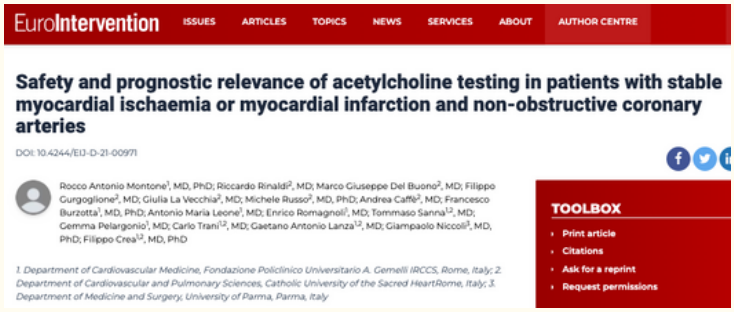

ELSEVIER

Current Problems in Cardiology
Available online 20 December 2021, 101084
In Press, Corrected Proof

Takotsubo Syndrome in Intensive Cardiac Care Unit: Challenges in Diagnosis and Management

Rocco Antonio Montone MD, PhD [a], Giulia La Vecchia MD [b], Marco Giuseppe Del Buono MD [b, c], Antonio Abbate MD, PhD [c], Tommaso Sanna MD, PhD [a, b], Daniela Pedicino MD, PhD [a], Giampaolo Niccoli MD, PhD [d], Massimo Antonelli MD, PhD [e, f], Filippo Crea MD,

https://eurointervention.pcronline.com/article/safety-and-prognostic-relevance-of-acetylcholine-testing-in-patients-with-stable-myocardial-ischaemia-or-myocardial-infarction-and-non-obstructive-coronary-arteries


EuroIntervention ISSUES ARTICLES TOPICS NEWS SERVICES ABOUT AUTHOR CENTRE

Safety and prognostic relevance of acetylcholine testing in patients with stable myocardial ischaemia or myocardial infarction and non-obstructive coronary arteries

DOI: 10.4244/EIJ-D-21-00971

Rocco Antonio Montone[1], MD, PhD; Riccardo Rinaldi[2], MD; Marco Giuseppe Del Buono[2], MD; Filippo Gurgoglione[2], MD; Giulia La Vecchia[2], MD; Michele Russo[2], MD, PhD; Andrea Caffè[2], MD; Francesco Burzotta[1], MD, PhD; Antonio Maria Leone[1], MD; Enrico Romagnoli[1], MD; Tommaso Sanna[1,2], MD; Gemma Pelargonio[1], MD; Carlo Trani[1,2], MD; Gaetano Antonio Lanza[1,2], MD; Giampaolo Niccoli[3], MD, PhD; Filippo Crea[1,2], MD, PhD

1. Department of Cardiovascular Medicine, Fondazione Policlinico Universitario A. Gemelli IRCCS, Rome, Italy; 2. Department of Cardiovascular and Pulmonary Sciences, Catholic University of the Sacred Heart,Rome, Italy; 3. Department of Medicine and Surgery, University of Parma, Parma, Italy

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Thank you to all our experts, researchers and investigators for their continued efforts to further understanding of Myocardial Ischaemic Syndromes

INOCA INNOVATIONS

Highlighting recent research, papers, journal articles and publications chosen by INOCA International, with dedicated narratives from the authors themselves.