

Ischemia in patients with non-obstructive disease (INOCA) in Italy:

How to Do Networking lessons from INOCA IT (RF-2019-12369486)

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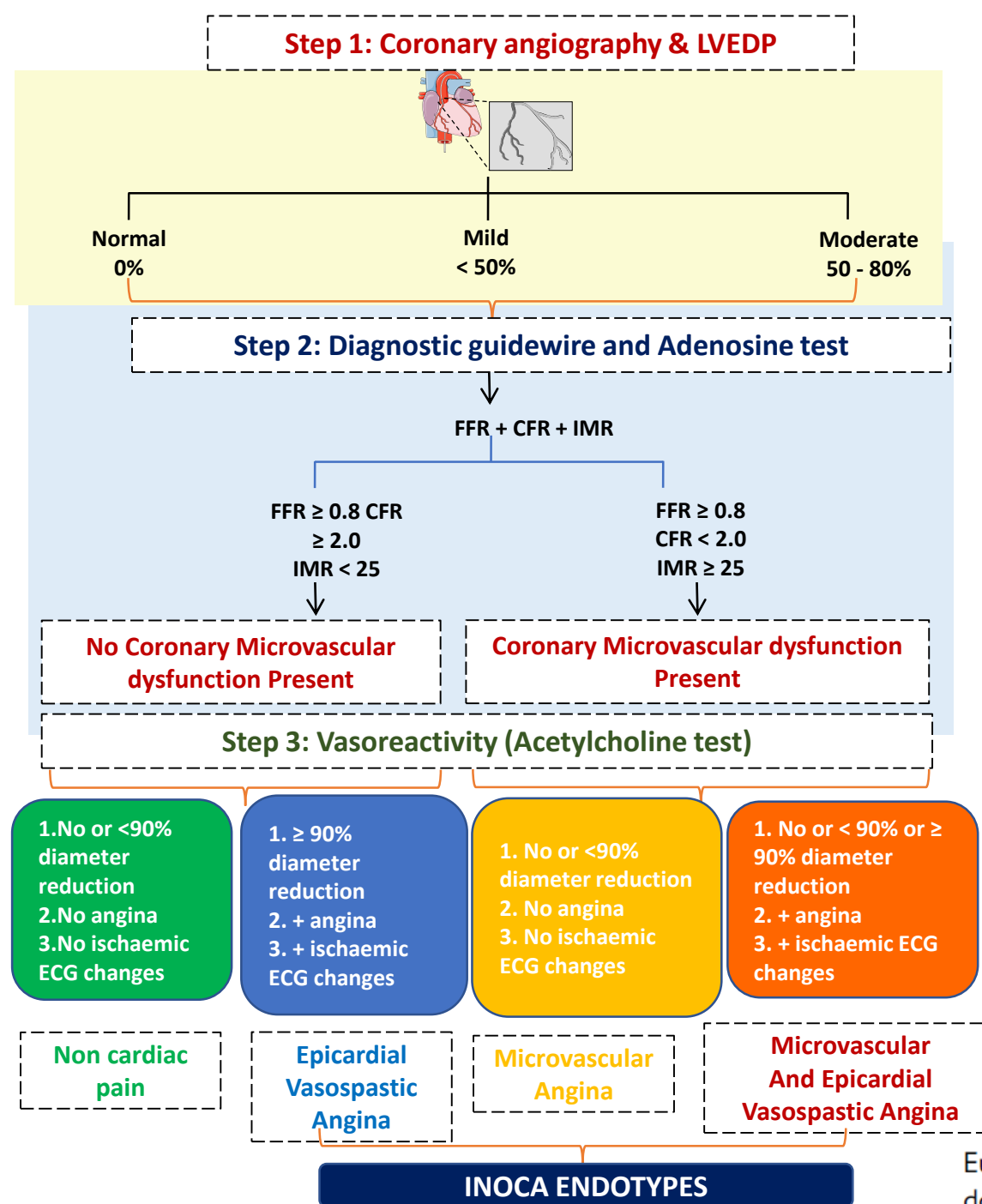


An EAPCI Expert Consensus Document on Ischaemia with Non-Obstructive Coronary Arteries in Collaboration with European Society of Cardiology Working Group on Coronary Pathophysiology & Microcirculation Endorsed by Coronary Vasomotor Disorders International Study Group

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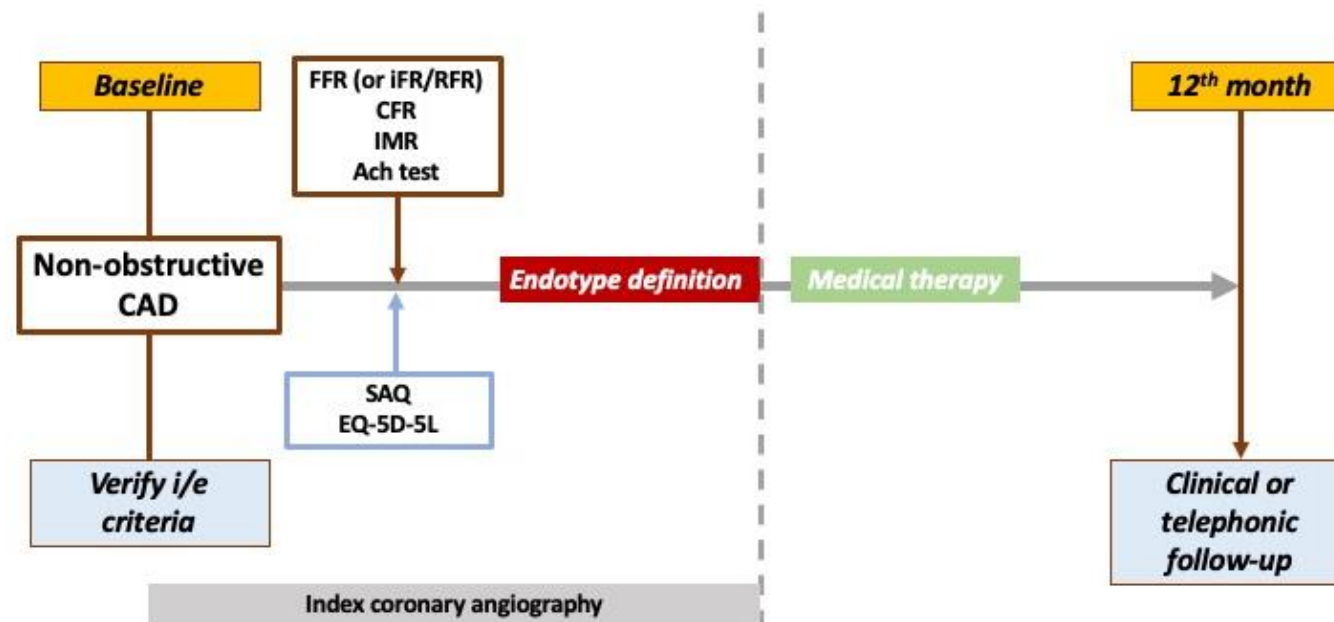
Invasive Evaluation



Ischemia in patients with non-obstructive disease (INOCA) in Italy

INOCA IT Multicenter Registry (RF-2019-12369486)

- Multicenter, prospective, non-randomized, single-arm, open label clinical study
- 200 patients with angina and/or positive stress test undergoing clinical indicated CA detecting non obstructive CAD

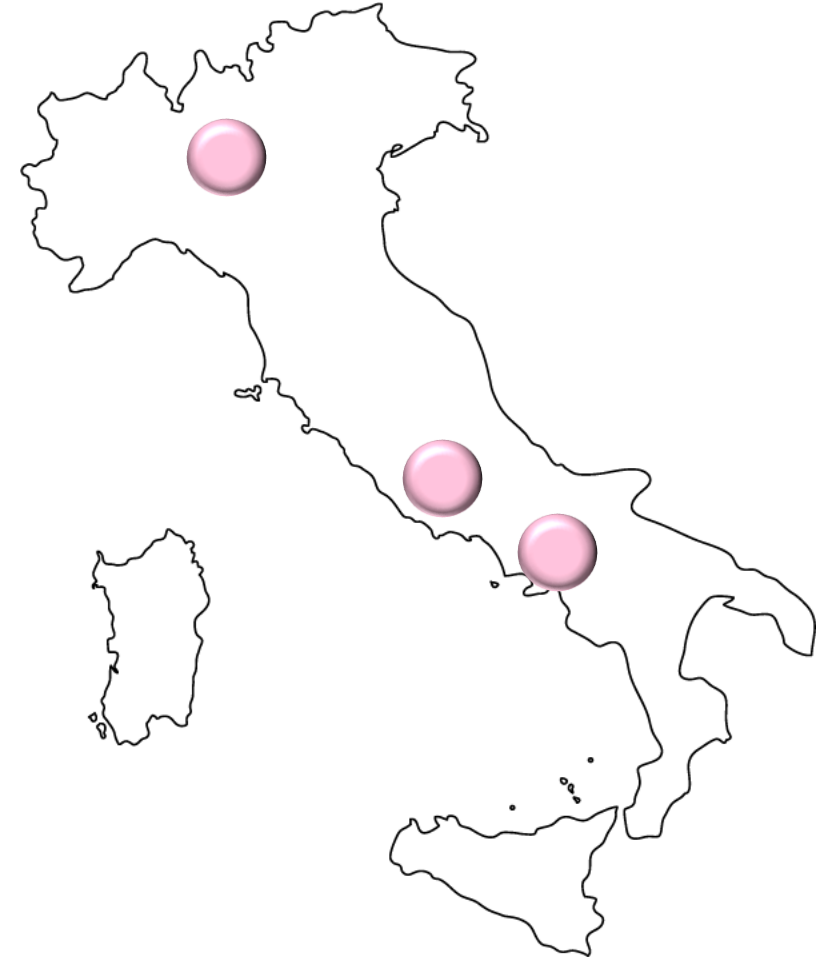


Ischemia in patients with non-obstructive disease (INOCA) in Italy:
INOCA IT Multicenter Registry. (RF-2019-12369486)



Centers involved

- U.O Emodinamica e Cardiologia interventistica, IRCCS Ospedale San Raffaele, **Milano**
- Dipartimento di Scienze Cardiovascolari e Toraciche Fondazione Policlinico Universitario A. Gemelli IRCCS, **Roma**
- Dipartimento Assistenziale Integrato di Emergenze Cardiovascolari, Medicina Clinica e dell'Invecchiamento Azienda Ospedaliera Universitaria Federico II, **Napoli**



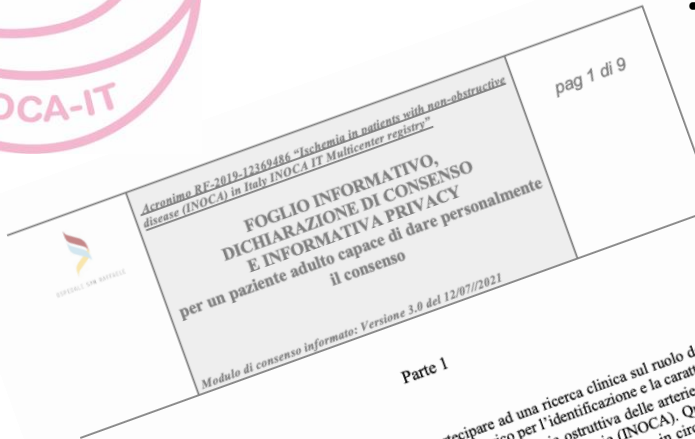
Ischemia in patients with non-obstructive disease
(INOCA) in Italy:
INOCA IT Multicenter Registry. (RF-2019-12369486)



Study Objectives

1. To investigate the prevalence of INOCA in women vs. men who are referred for a clinically indicated coronary angiography in three Centers in Northern, Central and Southern Italy
2. To stratify in INOCA endotypes patients according to the presence or absence of alternative (i.e. non obstructive CAD) causes of myocardial ischemia detected during CA clinically indicated through physiology tests
3. To implement a stratified therapy in these patients considering the different INOCA endotypes and evaluate the impact on angina class and quality of life as well as cardiac hospitalization and coronary revascularization during 1 year follow up





Ischemia in patients with non-obstructive disease (INOCA) in Italy INOCA IT Multicenter Registry. (RF-2019-12369486)

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February 1995:333-41

SPERTUS ET AL.
SEATTLE ANGINA QUESTIONNAIRE 339

Appendix

The Seattle Angina Questionnaire

1. The following is a list of activities that people often do during the week. Although for some people with several medical problems it is difficult to determine what it is that limits them, please go over the activities listed below and indicate how much limitation you have had due to chest pain, chest tightness, or angina over the past 4 weeks.

Place an x in one box on each line.

Activity	Severely Limited	Moderately Limited	Somewhat Limited	A Little Limited	Not Limited	Limited, or did not do for other reasons
Dressing yourself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Walking indoors on level ground	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Showering	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Climbing a hill or a flight of stairs without stopping	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gardening, vacuuming, or carrying groceries	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Walking more than a block at a brisk pace	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Running or jogging	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lifting or moving heavy objects (e.g. furniture, children)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Participating in strenuous sports (e.g. swimming, tennis)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Compared with 4 weeks ago, how often do you have chest pain, chest tightness, or angina when doing your most strenuous level of activity?
I have had chest pain, chest tightness, or angina...

Much more often	Slightly more often	About the same	Slightly less often	Much less often
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Over the past 4 weeks, on average, how many times have you had chest pain, chest tightness, or angina?
I get chest pain, chest tightness, or angina...

4 or more times per day	1-3 times per day	3 or more times per week but not every day	1-2 times per week	Less than once a week	None over the past 4 weeks
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Questionario sulla Salute
Versione italiana per l'Italia
(Italian version for Italy)

Gentile signora/e,
1) In questo Istituto Le viene proposto di partecipare ad una ricerca clinica sul ruolo di parametri di funzionalità (fisiologia) del microcircolo coronarico per l'identificazione e la caratterizzazione di quei pazienti che presentano ischemia cardiaca in assenza di patologia ostruttiva delle arterie coronarie (INOCA). Q

condizione definita dal termine ischemia cardiaca non ostruttiva delle arterie coronarie (INOCA). Q legato ad una varietà di disturbi funzionali del microcircolo coronarico, si riscontra in cir

pazienti che vengono sottoposti a coronarografia nel sospetto di cardiopatia ischemica, i donne di mezza età, e conferisce un aumentato rischio di eventi cardiovascolari avversi miocardico e scompenso cardiaco), oltre ad avere un significativo impatto negativo sulla stato attuale, la gestione terapeutica dei pazienti affetti da INOCA è controversa, tut emerge che un trattamento specifico, guidato dalla valutazione invasiva dei parame

microcircolo coronarico, può ridurre i sintomi e migliorare la qualità di vita di que? questa ricerca potrebbero aiutare, quindi, a riconoscere e caratterizzare la disfunzione microcircolo coronarico, può ridurre i sintomi e migliorare la qualità di vita di que? questa ricerca potrebbero aiutare, quindi, a riconoscere e caratterizzare la disfunzione microcircolo coronarico, può ridurre i sintomi e migliorare la qualità di vita di que?

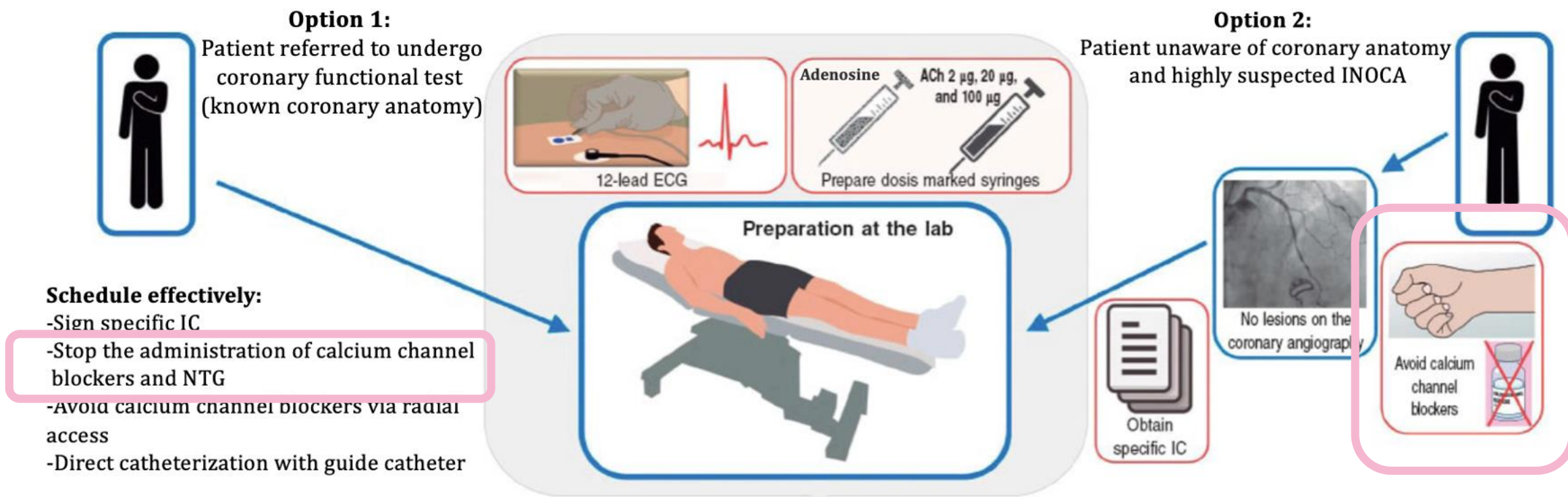
2) Questa ricerca si propone come obiettivo generale di migliorare la conoscenza della malattia del paziente. In particolare, con la ricerca che qui Le presentiamo, caratterizzare i pazienti che presentano ischemia cardiaca in coronarie. Questi pazienti possono presentare una varietà di che complessivamente conferiscono un aumentato rischio di



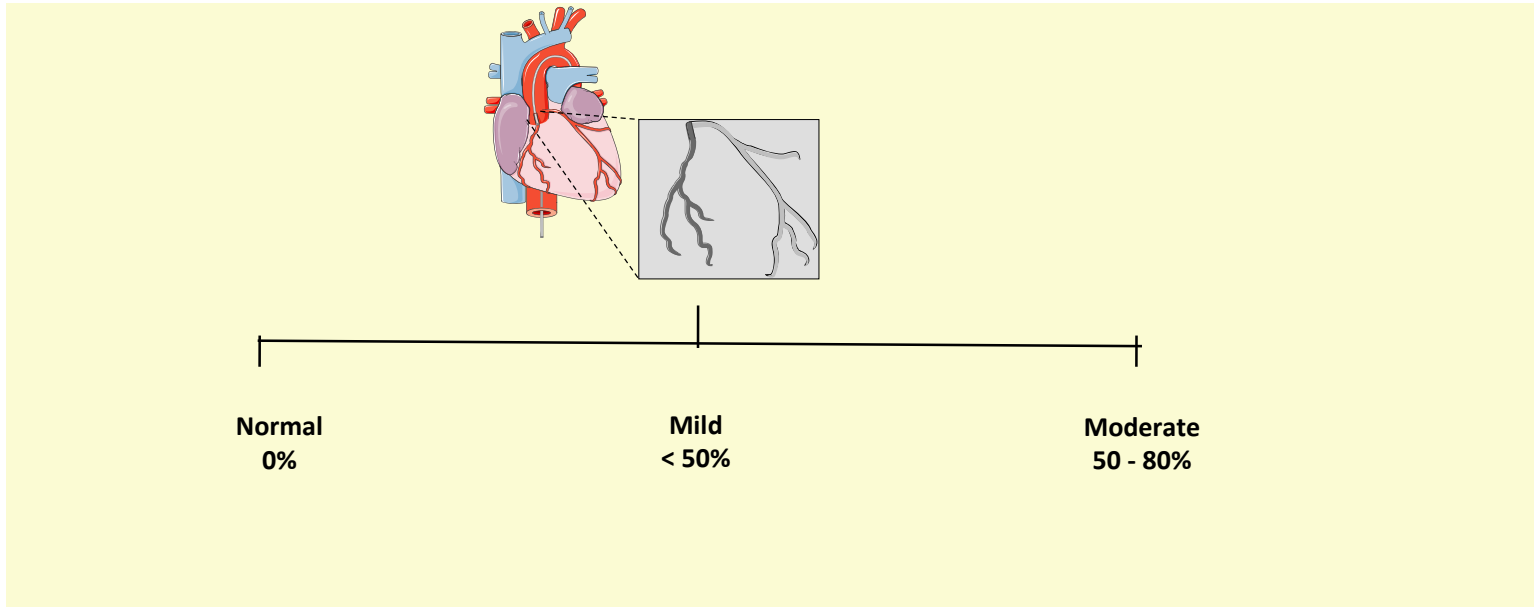


In the Cath Lab...

Ischemia in patients with non-obstructive disease (INOCA) in Italy: INOCA IT Multicenter Registry. (RF-2019-12369486)



Step 1: Coronary angiography



Step 2. Coronary function testing: Diagnostic guidewire and Adenosine test

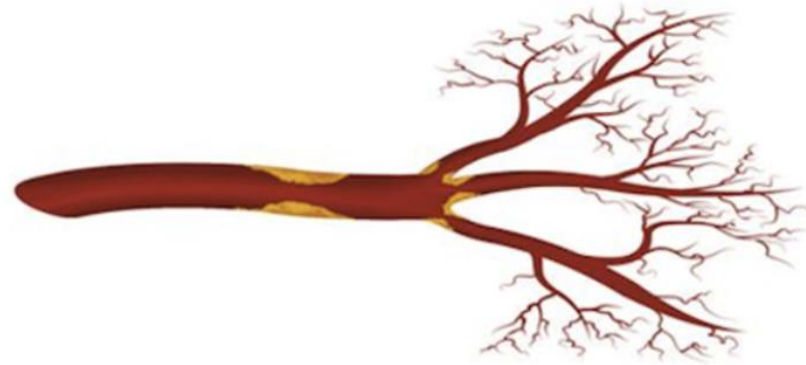
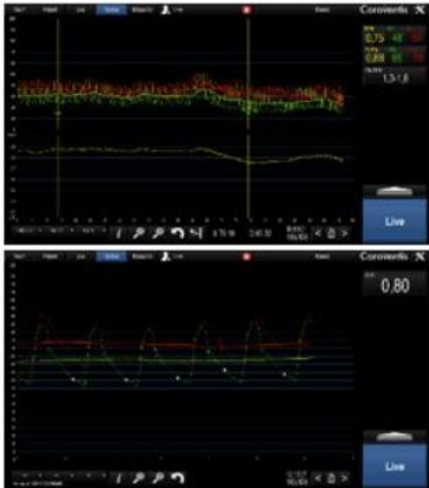
- Intravenous Adenosine (140 mcg/kg/min) to inducing steady-state hyperaemia and achieve endothelium-independent vasodilation



Step 2. Coronary function testing: Diagnostic guidewire and Adenosine test

Epicardial assessment

- FFR, RFR, Pd/Pa
- Pullback

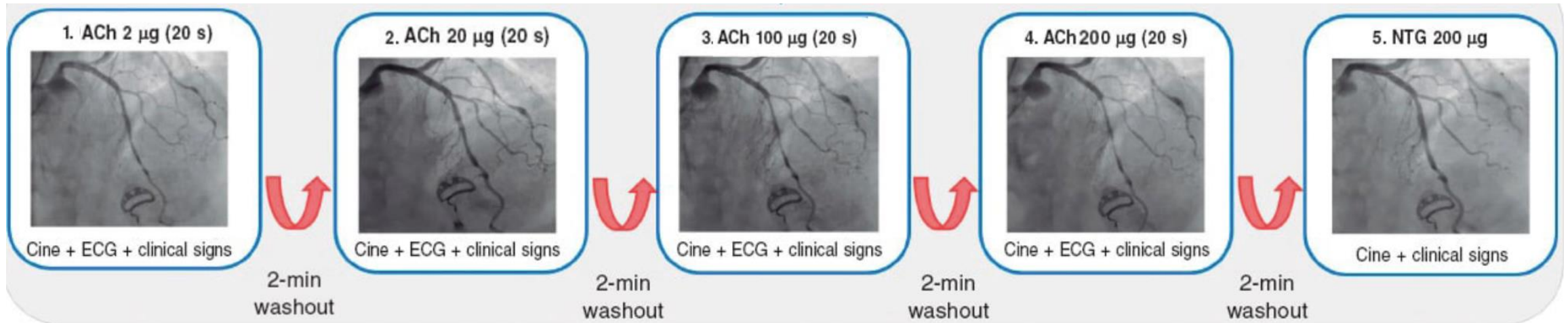


Microvascular assessment

- IMR, RRR
- CFR, PB-CFR
- Absolute Flow/Resistance

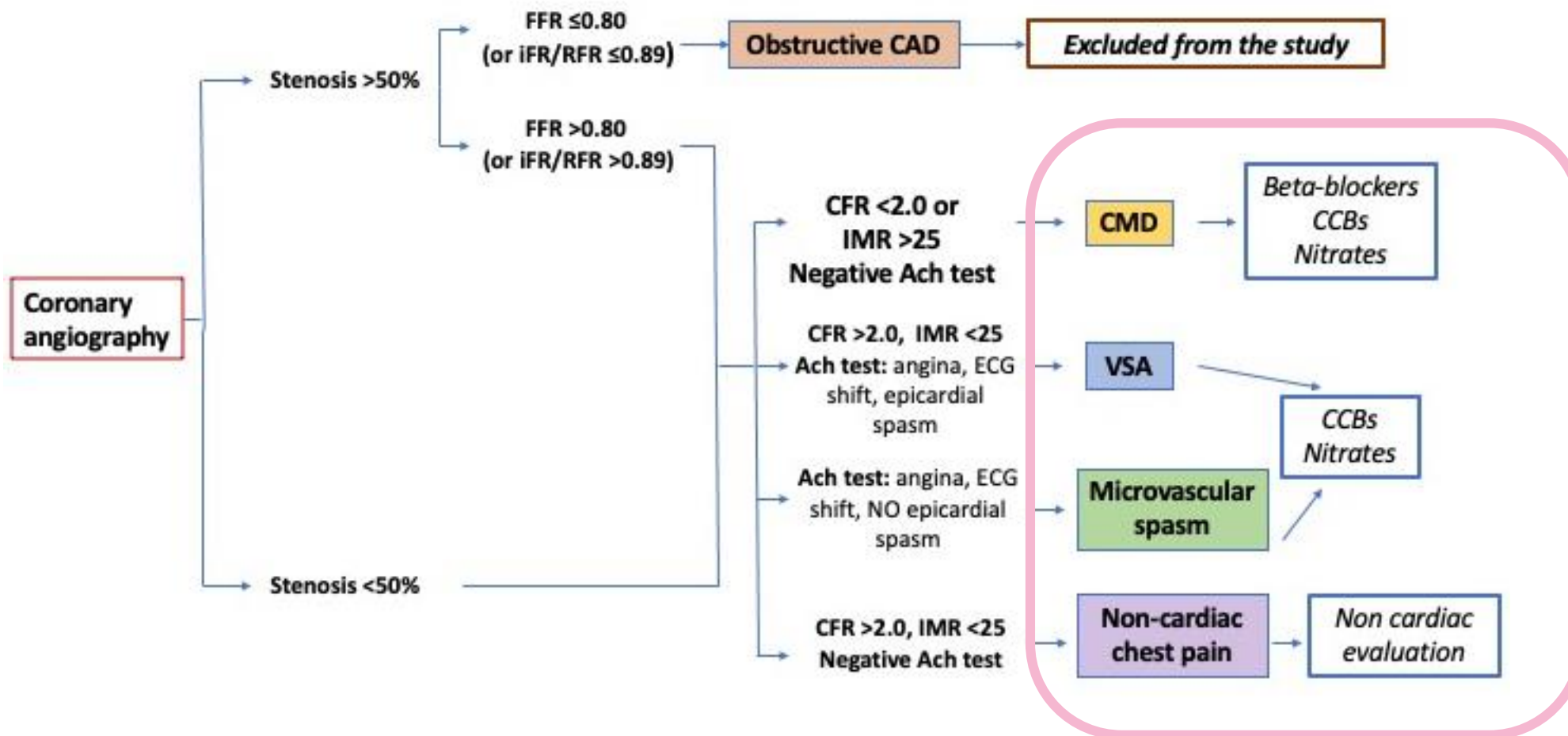


Step 3. Vasoreactivity Testing: Acetylcholine Test





Treatment Schedule





INTEGRAZIONE OSPEDALE-TERRITORIO





28.06.2022: PRIMO INCONTRO IN VIDEOCONFERENZA CARDIOLOGI DEL TERRITORIO – Area Metropolitana Milano





17.12.2022: SECONDO INCONTRO IN PRESENZA

“DONNE E CUORE”
COME IDENTIFICARE E TRATTARE INOCA
DAL TERRITORIO AL LABORATORIO DI EMODINAMICA

17 DICEMBRE 2022 GLAM HOTEL MILANO

RES

PROGRAMMA SCIENTIFICO

- 08.30 Apertura segreteria, registrazione partecipanti
- 09.00 Introduzione al corso e obiettivi
Chieffo Alaide, Cristiana Valerio
- 09.30 Pianeta donna: fattori di rischio cardiovascolari sesso specifici e quadri clinici differenti.
Cristiana Valerio
- 10.00 Diagnosi e cura dei pazienti con ischemia miocardica in presenza di coronaropatia non ostruttiva: disfunzione micro vascolare e/o vaso spasma epicardico
Chieffo Alaide
- 11.00 Coffee break
- 11.15 Registro Italiano Multicentrico su Ischemia in coronaropatia non ostruttiva (INOCA IT) RF 2019-12369486, finanziato dal Ministero della salute.
Giulia Ghizzoni
- 12.00 Discussione sulle tematiche precedentemente trattate e conclusioni
Alaide Chieffo, Cristiana Valerio, Giulia Ghizzoni
- 13.00 Chiusura del corso

FACULTY

Alaide Chieffo
Cristiana Valerio
Giulia Ghizzoni

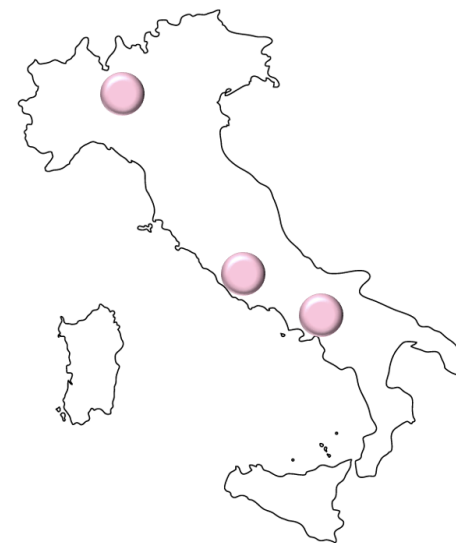


11.02.2023: TERZO INCONTRO IN PRESENZA E VIDEOCONFERENZA (MULTICENTRICO)

VIDEOCONFERENZA
RESIDENZIALE ECM



Responsabile Scientifico
Dr.ssa Alaide Chieffo





11.02.2023: TERZO INCONTRO IN PRESENZA E VIDEOCONFERENZA (MULTICENTRICO)





Partecipazione ad Eventi sul Territorio

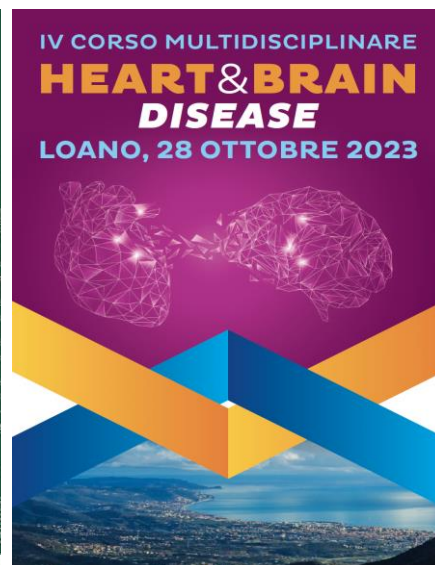
24.02.2023: PIACENZA .



14.10.2023: PARMA



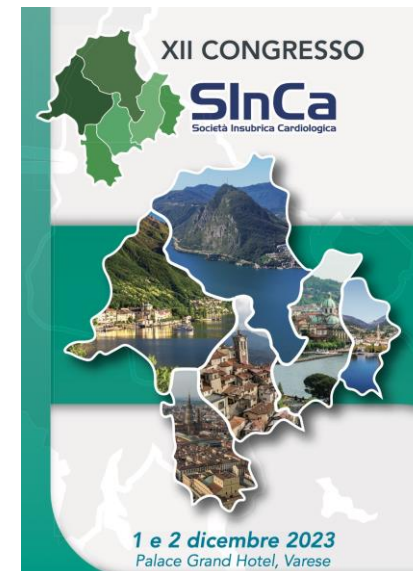
28.10.2023: MILANO LOANO



15 11 2023 ANCE : MILANO.



1.12. 2023. SINCA



27.03.2023: MILANO



Bergamo Grey Zones
9/10 giugno 2023

Brescia Cuore
24/25 novembre 2023



INFORMAZIONE & RICERCA



Ischemia con coronaropatia non ostruttiva: cos'è e perché è importante fare ricerca

PUBBLICATO IL 01 APRILE 2022

Al San Raffaele un nuovo studio multicentrico finanziato dal Ministero della Salute per comprendere meglio questa malattia ancora poco conosciuta, che colpisce soprattutto le donne



Valigia Blu è senza editori, senza pubblicità, senza paywall

Sostieni l'edizione 2024 di Valigia Blu



Come spiega a *Valigia Blu* Alaide Chieffo, cardiologa interventista, coordinatrice di area di attività di ricerca clinica all'Unità di Cardiologia Interventistica ed Emodinamica presso l'IRCCS Ospedale San Raffaele, "Le differenze relative alle patologie cardiache nella sindrome coronarica acuta e cronica sono in primo luogo inerenti alla sintomatologia e alla presentazione clinica. Spesso le donne non presentano dolore toracico 'classico' ma mancanza di respiro, dolore epigastrico, stanchezza e questo rende più difficile la diagnosi per il paziente stesso ma anche per gli stessi medici".

Nonostante ciò, dice la dottoressa Chieffo, che è anche presidente eletta della [European association of Percutaneous Cardiovascular Interventions](#), "in Italia come nel resto del mondo vi è tuttora limitata conoscenza da parte della comunità scientifica sulla cardiologia di genere. Tuttavia, negli ultimi anni grazie al lavoro delle società scientifiche nazionali e internazionali sempre più spazio è dedicato alla discussione" sull'argomento "con creazione di gruppi di studio in seno alle

L'ischemia miocardica in assenza di coronaropatia ostruttiva: stato dell'arte

Giulia Ghizzoni^{1,2}, Luigi Di Serafino³, Giulia Botti^{1,2}, Domenico Galante^{4,5}, Domenico D'Amario⁶, Stefano Benenati^{7,8}, Filippo Luca Gurgoglione⁹, Renzo Laborante¹⁰, Graziella Pompei¹¹, Italo Porto^{7,12}, Gianluca Calogero Campo¹¹, Giampaolo Niccoli⁹, Giovanni Esposito³, Antonio Maria Leone^{4,5}, Alaide Chieffo^{1,2}

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⁶Dipartimento di Cardiologia Traslazionale, Università del Piemonte Orientale, Novara

⁷Dipartimento di Medicina Interna, Università degli Studi, Genova

⁸Oxford Heart Centre, Oxford University Hospitals, NHS Trust, Oxford, UK

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¹⁰Dipartimento di Scienze Cardiovascolari e Polmonari, Università Cattolica del Sacro Cuore, Roma

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Chest pain affects more than 100 million people globally, however up to 70% of patients undergoing invasive angiography do not have obstructive coronary artery disease and ischemia with non-obstructive coronary artery disease (INOCA) is often a cause of the clinical picture. The symptoms reported by INOCA patients are very heterogeneous and often misdiagnosed as non-cardiac leading to under-diagnosis/investigation and under-treatment. The underlying pathophysiological mechanisms of INOCA are multiple and include coronary vasospasm and microvascular dysfunction. Most importantly, this condition must not be considered benign: compared to asymptomatic individuals, INOCA patients present an increased incidence of cardiovascular events, rehospitalizations, as well as impaired quality of life, with increasing costs for healthcare systems. The aims of this review are to describe the pathophysiological and clinical characteristics of INOCA and to provide guidance to the medical community on the diagnostic approaches and management of INOCA, also via a series of clinical case reports.

Key words. Acetylcholine; Coronary artery disease; Coronary flow reserve; Coronary microvascular dysfunction; Coronary physiology; Index of microvascular resistance; INOCA; Invasive functional test; Vasospastic angina.





INFORMAZIONE & RICERCA



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“The INOCA-IT: Rationale and design of a multicenter registry investigating ischemia in patients with non-obstructive coronary artery (INOCA) disease in Italy”

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Giovanni Esposito^g, Matteo Montorfano^{a,b}, Alaide Chieffo^{a,b,h}

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INOCA
Microvascular angina
Microvascular spasm
Vasospastic angina

ABSTRACT

Background: Ischemia with non-obstructive coronary artery (INOCA) disease is being progressively acknowledged as one of the pathophysiological mechanisms of chronic coronary syndrome (CCS) in an increasingly wide range of clinical pictures. Although the research has already begun to move towards a defined diagnostic pathway and a specific medical therapy for this disease, at present it remains a clinical challenge, especially if not thoroughly investigated.

Methods and results: The INOCA IT Multicenter Registry RF-2019-12369486 is a prospective, multicentric, non-randomized, single-arm, open label clinical study which aims to evaluate the efficacy of a stratified diagnostic and therapeutic approach on adverse events prevention and symptom relief in Italian patients with INOCA disease. The study population includes patients with a clinical presentation of CCS for angina and/or positive stress test for myocardial ischemia and evidence of non-obstructive coronary artery disease (CAD) at coronary angiography. In these patients a complete invasive coronary physiology assessment is performed with the guidewire-based measurement of coronary flow reserve (CFR) and index of microvascular resistance (IMR), followed by acetylcholine (ACh) spasm provocation test. On the basis of the results of coronary function testing, patients are stratified into different INOCA endotypes (coronary microvascular disease, vasospastic angina, microvascular spasm, non-cardiac chest pain) and given a tailored medical therapy in accordance with the latest scientific evidence. At one year follow-up the impact of such a target therapy on angina class and quality of life, as well as on cardiovascular adverse events (hospitalization and coronary revascularization) is evaluated.

Conclusions: The INOCA-IT Multicenter Registry will inform clinicians on sex-specific prevalence of INOCA in Italy and will show the impact of a stratified diagnostic and therapeutic approach on symptoms burden and prognosis of INOCA patients.

1. Introduction

In recent years scientific literature and everyday clinical practice have shown a need to better define and clarify a heterogeneous group of

clinical presentations relating to myocardial ischemia in patients without evidence of obstructive coronary artery disease (CAD) at invasive coronary angiography. [1] Nowadays we refer to it by the acronym INOCA: “Ischemia with Non-Obstructive Coronary Artery”.

Abbreviations: ACh, Acetylcholine; CAD, Coronary Artery Disease; CBF, Coronary Blood Flow; CFR, Coronary Flow Reserve; CMD, Coronary Microvascular Dysfunction; CCS, Chronic Coronary Syndrome; ECG, Electrocardiographic/Electrocardiogram; FFR, Fractional Flow Reserve; iFR, instantaneous Wave-Free Ratio; IMR, Index of Microvascular Resistance; INOCA, Ischemia with Non-Obstructive Coronary Artery Disease; RFR, Resting Full-Cycle Ratio; VSA, Vasospastic Angina.

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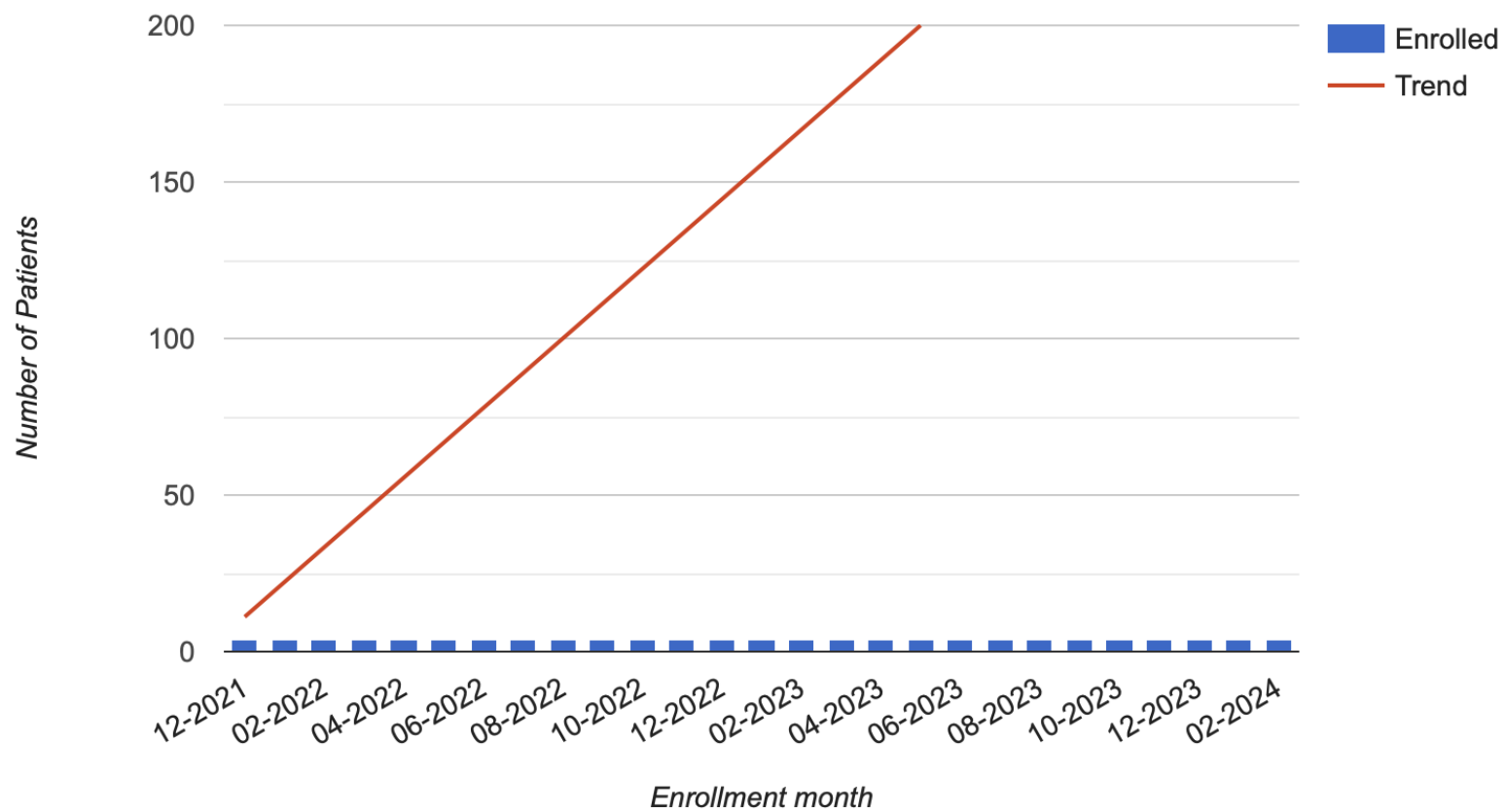
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INOCA-IT REGISTRY: TREND DI ARRUOLAMENTO

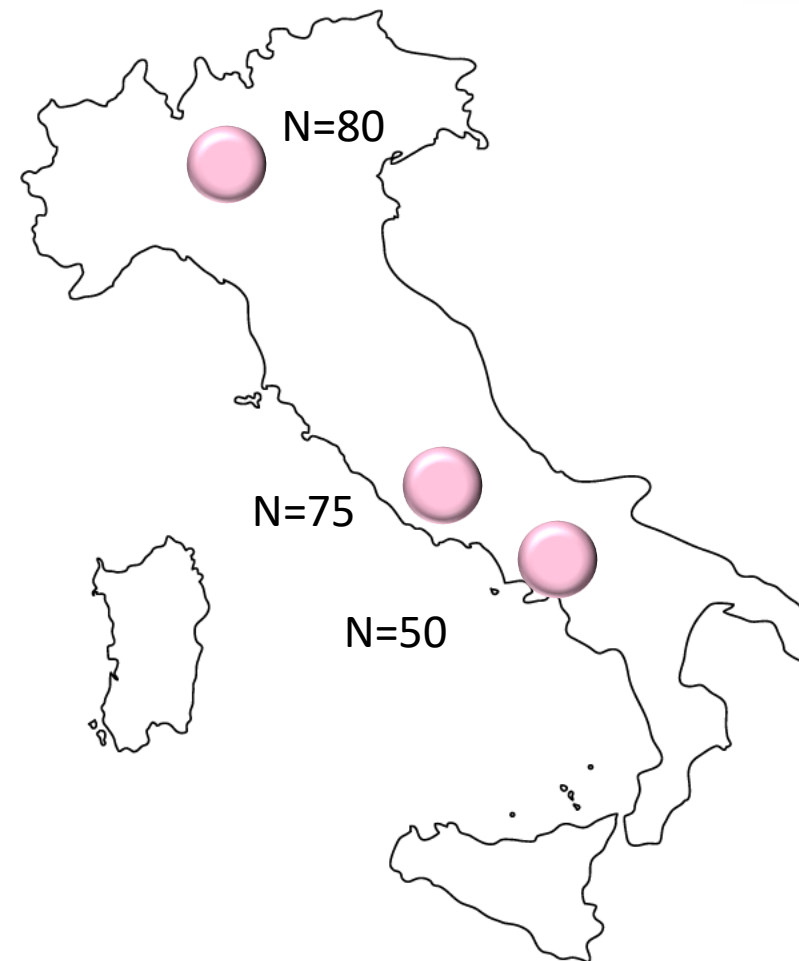


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- Dipartimento Assistenziale Integrato di Emergenze Cardiovascolari, Medicina Clinica e dell'Invecchiamento Azienda Ospedaliera Universitaria Federico II, **Napoli**



205 pazienti arruolati!!

Arruolamento terminato 29/02/2024

Team
Work!!



Thanks for your attention



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