ATEROSCLEROSE SUBCLÍNICA
QUANDO PESQUISAR?

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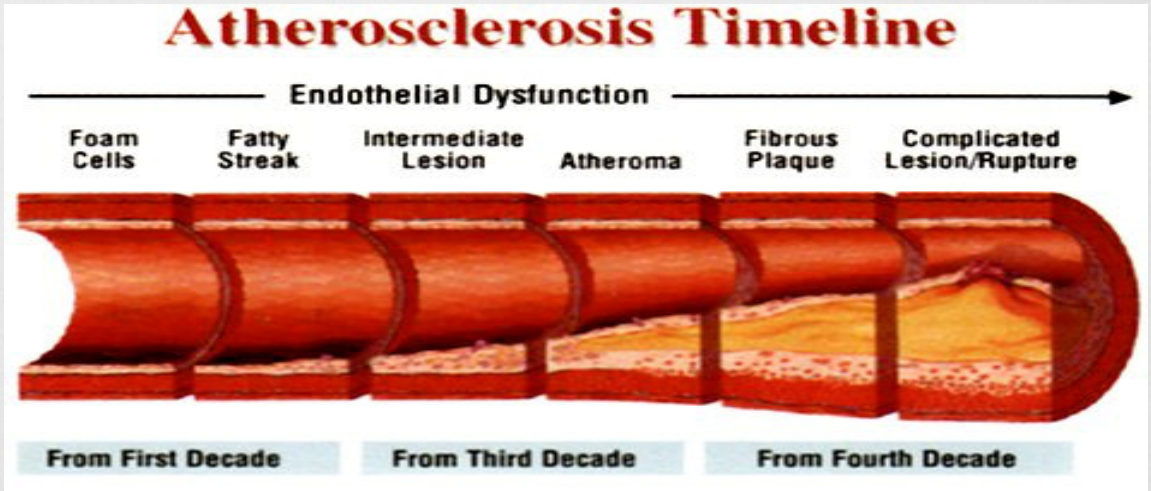
29º CONGRESSO DE CARDIOLOGIA DO ESTADO DA BAHIA

DEVEMOS?

IMPORTÂNCIA DO PROBLEMA

- **Aterosclerose** → Doença imuno-inflamatória crônica de artérias de médio e grande porte, de evolução lenta.[1]
- Principal causa de morbi-mortalidade no mundo.[2]



1 – Berger JS, et al. Screening for cardiovascular risk in asymptomatic patients. J Am Coll Cardiol 2010;55:1169e77.
2 – Brindle P, et al et al. Accuracy and impact of risk assessment in the primary prevention of cardiovascular disease:... Heart 2006;92:1752e9.

ATEROSCLEROSE SINTOMÁTICA PONTA DO ICEBERG!

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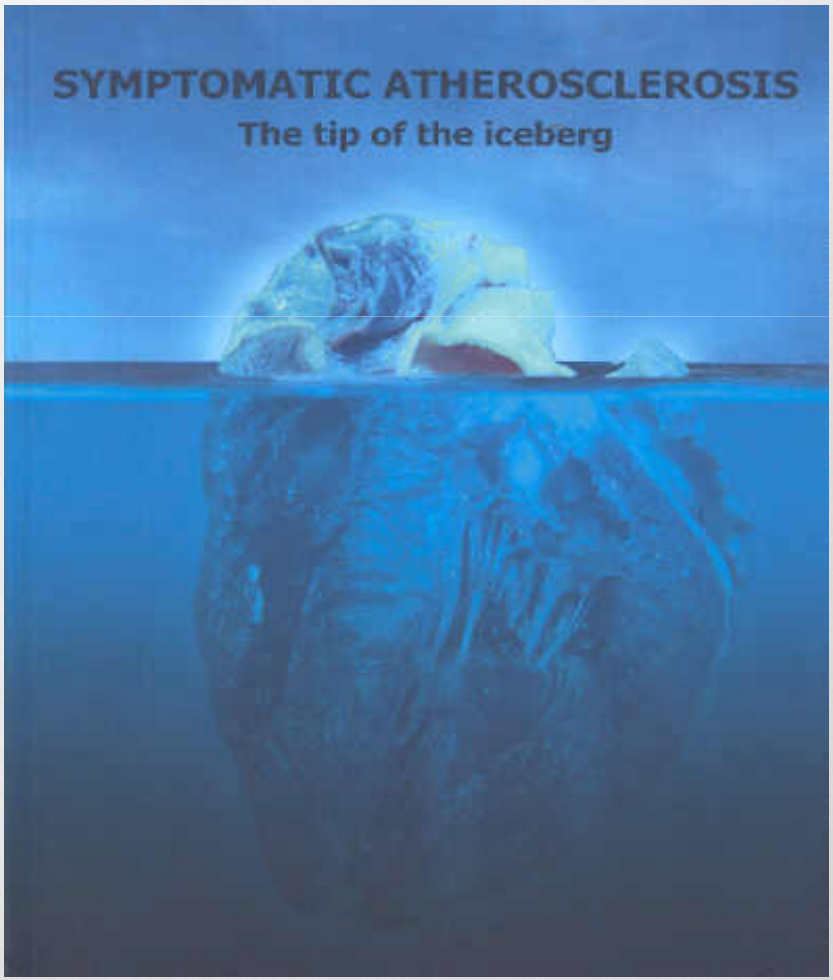
- Identificar pacientes de alto risco para medidas preventivas.
- Testes de estresse cardíaco → Detecção apenas de estenoses coronárias limitantes de fluxo.
- 70% das SCA resultam de placas de aterosclerose não hemodinâmi-camente significativas.



ESTRATIFICANDO O RISCO COM SCORES CLÍNICOS

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NCEP ATP III / Framingham Risk Score

- Age 55 years — 8 points
- Total cholesterol 240–279 — 4 points
- HDL-C < 40 — 2 points
- Systolic BP 140–159 (no Rx) — 3 points

Total Points
10 year risk of MI

Note:
If smoking, total po
10 year risk =

Framingham Risk Score

THE HEART OF A WOMAN
IN EVERY WOMAN, A BEATING HEART

Available at: http://hp2010.nhlbihin.net/atpiii/calculator.asp?usertype=prof

NATIONAL CHOLESTEROL EDUCATION PROGRAM
Third Report of the Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel III)

Risk Assessment Tool for Estimating 10-year Risk of Developing Hard CHD (Myocardial Infarction and Coronary Death)

The risk assessment tool below uses recent data from the Framingham Heart Study to estimate 10-year risk for "hard" coronary heart disease outcomes (myocardial infarction and coronary death). This tool is designed to estimate risk in adults aged 20 and older who do not have heart disease or diabetes. Use the calculator below to estimate 10-year risk.

Male

Risk	
Low	< 10% (ideally, < 5%)
Intermediate	10% to 20%
High	> 20%

theheart.org | MedscapeCME Cardiology

TABLE: RISK FACTORS INCLUDED TO CALCULATE 10-YEAR AND LIFETIME RISK OF ASCVD[2,a]

Risk Factor	Options
Sex	Male or female
Age (y)	Range,[b] 20-79
Race	African American or white/others
Total cholesterol (mg/dL)	Range, 130-320
HDL-C (mg/dL)	Range, 20-100
Systolic blood pressure (mm Hg)	Range, 90-200
Treatment for high blood pressure	Yes or No
Diabetes	Yes or No
Smoker	Yes or No

ASCVD = atherosclerotic cardiovascular disease; HDL-C = high-density lipoprotein cholesterol.
[a]Risk calculator is intended for individuals aged 20 to 79 years who do not have clinical ASCVD and who have a low-density lipoprotein cholesterol level <190 mg/dL; factors are unequally weighted.
[b]Age range is 20-59 years for lifetime risk calculation.

ESTRATIFICANDO O RISCO COM SCORES CLÍNICOS

> 60% dos eventos cardiovasculares ocorrem em pacientes nas categorias de baixo ou intermediário risco dos scores clínicos

Em uma grande proporção de pacientes com 1 fator de risco, a doença não se desenvolve.

REFINANDO OS SCORES CLÍNICOS

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Imaging

Detection of High-Risk Young Adults and Women by Coronary Calcium and National Cholesterol Education Program Panel III Guidelines

Khurram Nasir, MD, MPH,*† Erin D. Michos, MD,† Roger S. Blumenthal, MD,† Paolo Raggi, MD‡
Pittsburgh, Pennsylvania; Baltimore, Maryland; and New Orleans, Louisiana

- 1.611 pacientes assintomáticos submetidos à TC de coronária com score de cálcio.
- 78% dos pacientes com score de cálcio > 400 Agatston não eram alto risco ou candidatos ao uso de estatina pela NCEP-ATP III.

Distribution of Coronary Artery Calcium Scores by Framingham 10-Year Risk Strata in the MESA (Multi-Ethnic Study of Atherosclerosis)

Potential Implications for Coronary Risk Assessment

Tochi M. Okwuosa, DO,* Philip Greenland, MD,† Hongyan Ning, MD, MS,† Kiang Liu, PHD,† Diane E. Bild, MD, MPH,‡ Gregory L. Burke, MD, MSc,§ John Eng, MD,‖ Donald M. Lloyd-Jones, MD, ScM†

Detroit, Michigan; Chicago, Illinois; Bethesda, Maryland; Wake Forest, North Carolina; and Baltimore, Maryland

Improvements in risk stratification for the occurrence of cardiovascular disease by imaging subclinical atherosclerosis: a systematic review

Sanne A E Peters, Hester M den Ruijter, Michiel L Bots, Karel G M Moons

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Imagin

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doi:10.1016/j.jacc.2005.02.088

Coronary Calcification, Coronary Disease Risk Factors, C-Reactive Protein, and Atherosclerotic Cardiovascular Disease Events

The St. Francis Heart Study

Yadon Arad, MD, FACC, Kenneth J. Goodman, MD, Marguerite Roth, RN, David Newstein, DRPH, Alan D. Guerci, MD, FACC

Roslyn, New York

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Screening Asymptomatic Subjects for Subclinical Atherosclerosis

Can We, Does It Matter, and Should We?

Prediman K. Shah, MD

Los Angeles, California

ORIGINAL ARTICLE

The First SHAPE (Screening for Heart Attack Prevention and Education) Guideline

Morteza Naghavi, MD, Erling Falk, MD,† Harvey S. Hecht, MD,‡ and Prediman K. Shah, MD§ for the SHAPE Task Force*

PORQUE PESQUISAR ATEROSCLEROSE SUBCLÍNICA

- Detectar a doença que estamos tentando prevenir é melhor do que apenas identificar fatores de risco.
- Pode reclassificar pacientes em baixo e intermediário risco por scores clínicos → **Metas mais agressivas de LDL-c**
- Pode identificar pacientes com probabilidade muito baixa de eventos cardiovasculares → **Sem benefício com terapia.**
- Pacientes de alto risco identificados através de exames de imagem apresentam melhor adesão ao tratamento.

1 – Berger JS, et al. Screening for cardiovascular risk in asymptomatic patients. J Am Coll Cardiol 2010;55:1169e77.
2 – Brindle P, et al et al. Accuracy and impact of risk assessment in the primary prevention of cardiovascular disease:... Heart 2006;92:1752e9.

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doi:10.1016/j.jacc.2010.11.053

Cardiac Imaging and Risk

Distribution of Coronary Artery Calcium Scores by Framingham 10-Year Risk Strata in the MESA (Multi-Ethnic Study of Atherosclerosis)

Potential Implications for Coronary Risk Assessment

Tochi M. Okwuosa, DO,* Philip Greenland, MD,† Hongyan Ning, MD, MS,† Kiang Liu, PHD,† Diane E. Bild, MD, MPH,‡ Gregory L. Burke, MD, MSc,§ John Eng, MD,‖ Donald M. Lloyd-Jones, MD, ScM†

Detroit, Michigan; Chicago, Illinois; Bethesda, Maryland; Wake Forest, North Carolina; and Baltimore, Maryland

- 5.560 pacientes
- Avaliaçao de risco (FRS)
- Realização de score de cálcio

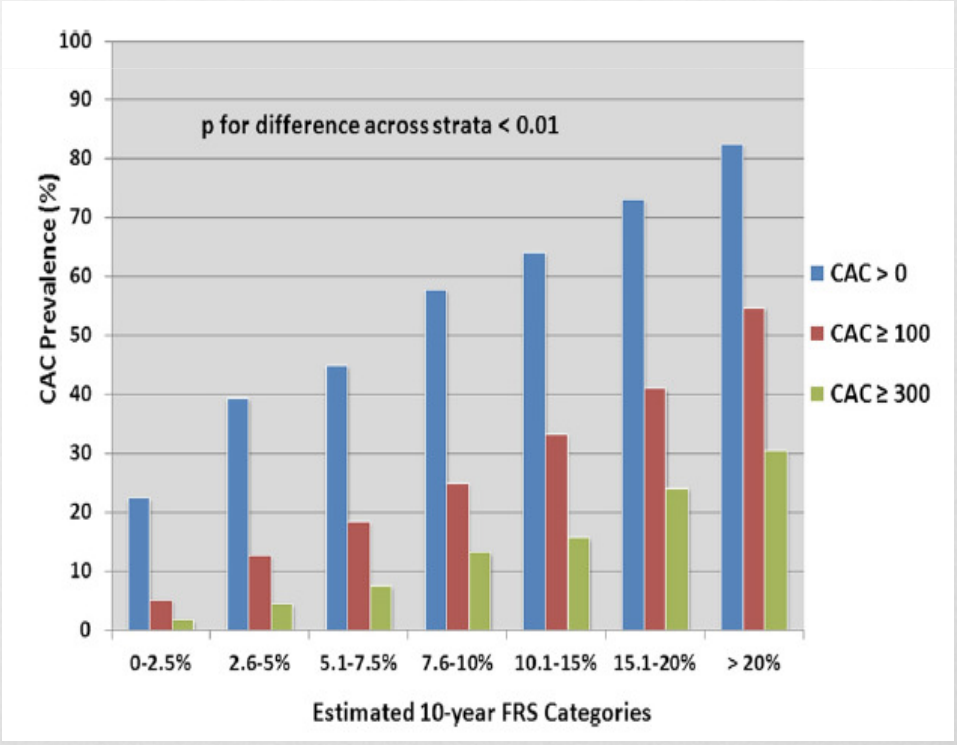

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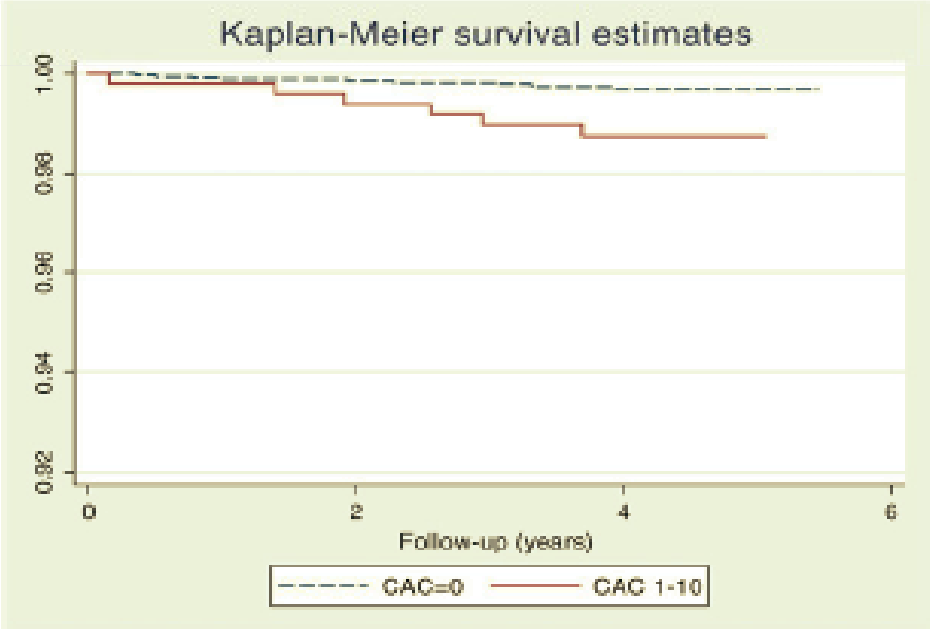
Table 2 CAC Prevalence, Amount, and Number Needed to Screen Compared With Framingham Risk Score Categories

	Framingham Risk Score Categories (n = 5,560)							
CAC Score Group	0.0% to 2.5% (n = 1,730)	2.6% to 5.0% (n = 1,045)	5.1% to 7.5% (n = 442)	7.6% to 10.0% (n = 779)	10.1% to 15.0% (n = 617)	15.1% to 20.0% (n = 793)	>20% (n = 254)	p Value
Median CAC score*	28.6 (7.4-91.6)	39.7 (11.9-140.6)	62.5 (15.9-211.2)	71.5 (19.3-257)	111.6 (27.7-284.1)	134.6 (33.5-427.6)	198.6 (56.5-483.7)	
CAC >0 (n = 2,626)	22.3	39.3	44.8	57.6	63.9 36,1%	73.0 27,0%	82.3 17,7%	<0.01
NNS (CAC >0)	4.5	2.5	2.2	1.7	1.6	1.4	1.2	
CAC ≥100 (n = 1,163)	5.1	12.6	18.3	24.8	33.2	40.9	54.7	<0.01
NNS (CAC ≥100)	19.4	7.9	5.5	4.0	3.0	2.5	1.8	
CAC ≥300 (n = 574)	1.7	4.4	7.5	13.1	15.6	24.1	30.3	<0.01
NNS (CAC ≥300)	59.7	22.7	13.4	7.6	6.4	4.2	3.3	

Imaging and Diagnostic Testing

Cardiovascular events with absent or minimal coronary calcification: The Multi-Ethnic Study of Atherosclerosis (MESA)

Matthew J. Budoff, MD, FACC, FAHA,[a] Robyn L. McClelland, PhD,[b] Khurram Nasir, MD, MPH,[c] Philip Greenland, MD,[d] Richard A. Kronmal, PhD,[b] George T. Kondos, MD,[e] Steven Shea, MD,[f] Joao A. C. Lima, MD,[g] and Roger S. Blumenthal, MD[c] *Torrance, CA; Seattle, WA; Baltimore, MD; Chicago, IL; and New York, NY*



Kaplan-Meier survival curve for hard CHD events among those with zero CAC and minimal CAC (1-10).

0,5% de eventos cardiovasculares em 4,1 anos em pacientes com Score de cálcio zero

Mas ainda restam dúvidas…

- Estudos de Custo-efetividade.
- Calibração dos métodos. Uso de radiação.
- Poder da reclassificação
- Ausência de ensaios clínicos randomizados demonstrando a redução de eventos devido a terapia mais agressiva após reclassificação.
- Outros biomarcadores e novos fatores de risco

RECOMENDAÇÕES

29º CONGRESSO DE CARDIOLOGIA DO ESTADO DA BAHIA

ACC/AHA Prevention Guideline

OPEN

2013 ACC/AHA Guideline on the Assessment of Cardiovascular Risk

A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines

Recommendation 1. If, after quantitative risk assessment, a risk-based treatment decision is uncertain, assessment of 1 or more of the following—family history, hs-CRP, CAC score, or ABI—may be considered to inform treatment decision making.

Não utilizar rotineiramente em pacientes com risco intermediário

RECOMENDAÇÕES

29º CONGRESSO DE CARDIOLOGIA DO ESTADO DA BAHIA

2016 European Guidelines on cardiovascular disease prevention in clinical practice

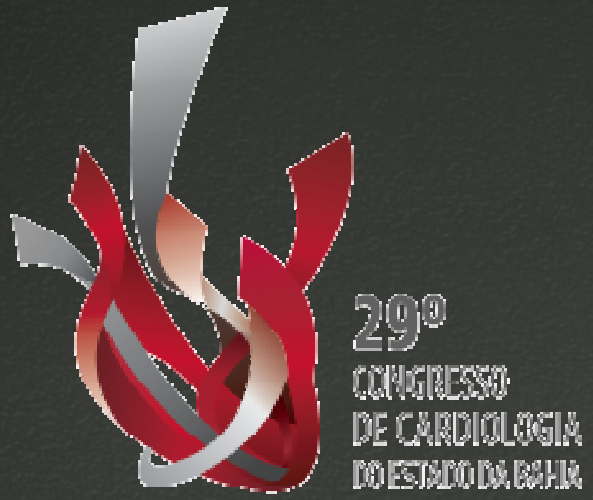
The Sixth Joint Task Force of the European Society of Cardiology and Other Societies on Cardiovascular Disease Prevention in Clinical Practice (constituted by representatives of 10 societies and by invited experts)

2.4.4 Measurement of preclinical vascular damage

Key messages

- Routine screening with imaging modalities to predict future CV events is generally not recommended in clinical practice.
- Imaging methods may be considered as risk modifiers in CV risk assessment, i.e. in individuals with calculated CV risks based on the major conventional risk factors around the decisional thresholds.

OBRIGADO.



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