# Thrombosis and Antithrombotic Care in the Hispanic Community

**Tuesday | March 19, 2024 | 12:00pm ET**

Anticoagulation FORUM

# Disclosures & Notification of Support

**Acknowledgement of Financial Commercial Support:**

*The speakers have the following relevant financial relationships with commercial interests:*

**Julia Bayadinova**
Pfizer, Inari Medical, Leo Pharma

**Julia Mulheman**
None

**Alfonso Tafur**
Doasense, Bristol Myers Squibb (BMS), BioTap, Novartis, Idorsia, Anthos, Janssen, Recovery Foce

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# Speakers

## Presenter

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Director, Vascular Medicine &
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*Endeavor Health*
@AJTafur

## Moderators

**Julia Mulheman, PharmD, CACP**
Pharmacy Manager
*Cleveland Clinic Health System*

**Julia Bayadinova, NP, MN**
Nurse Practitioner
*St. Joseph's Healthcare Hamilton*

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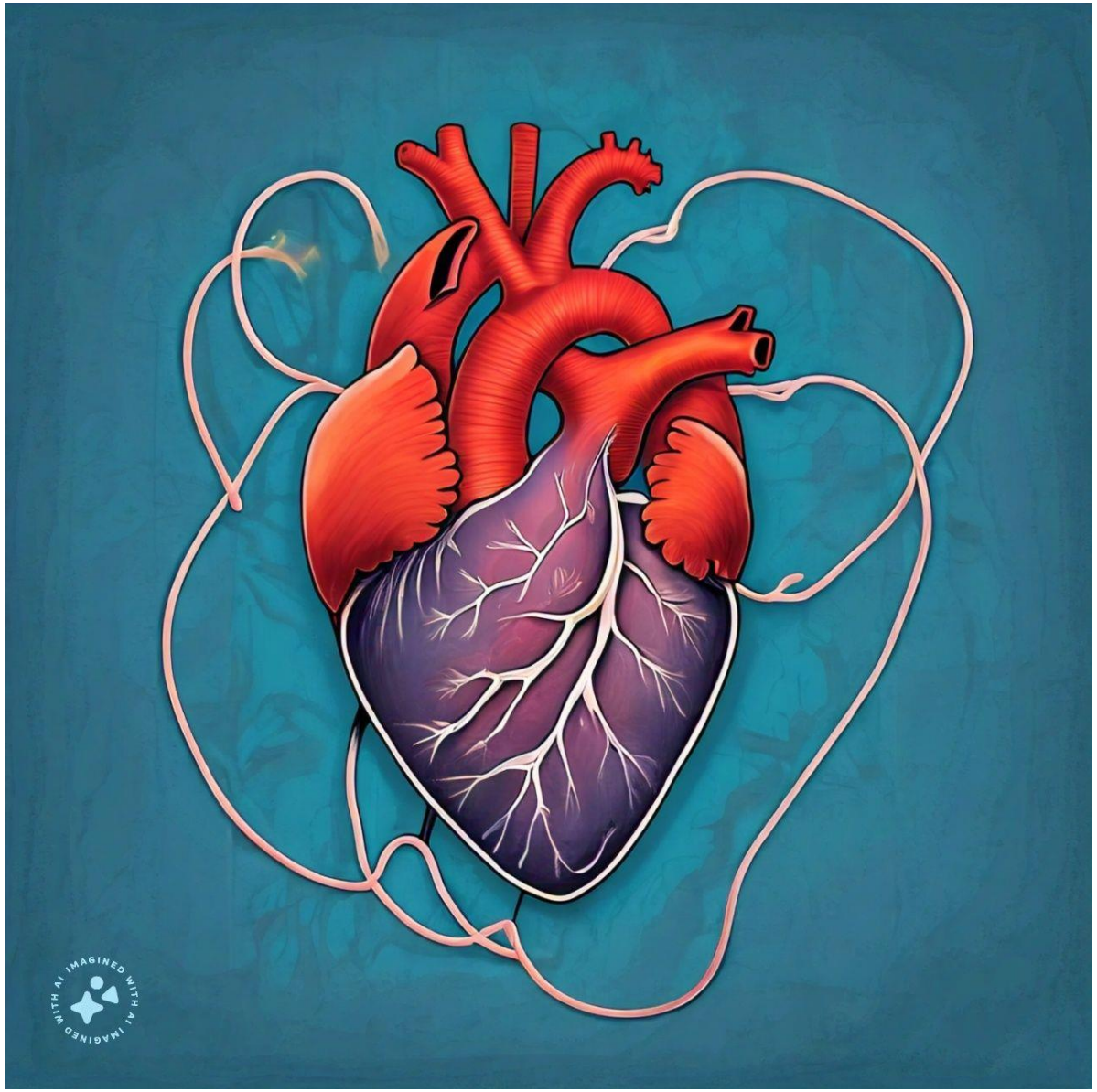


# 44 YO Hispanic Male, STEMI

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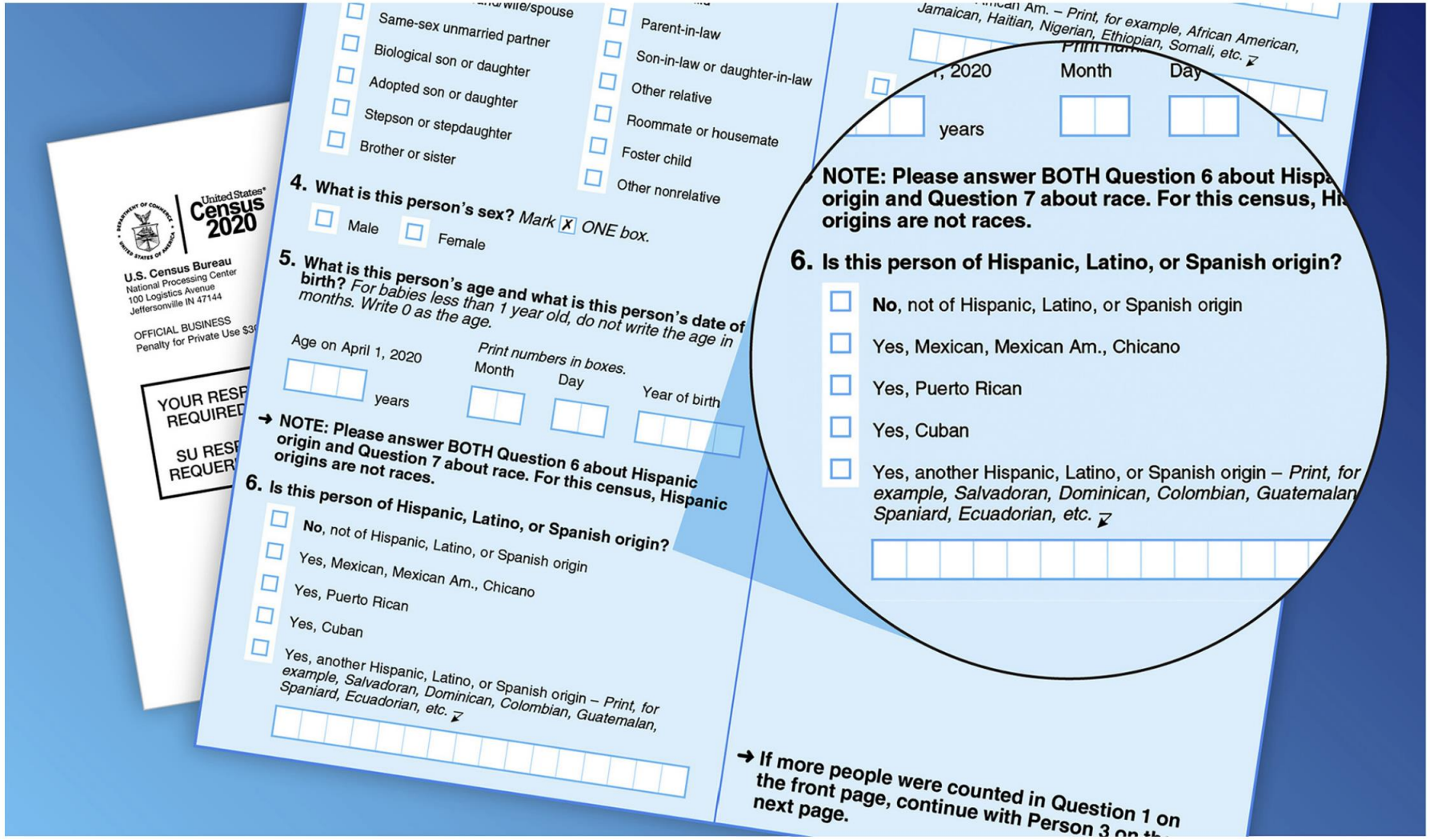
# Discussion Points

- Dissect which thrombotic and cardiovascular risk factors are prevalent among Hispanics
- Contrast the epidemiology of thrombotic and cardiovascular disease among Hispanics relative to other groups
- Deconstructing a Paradox
- Discuss cultural competence factors that may impact antithrombotic care delivery for Hispanics

# There are limitations on the data

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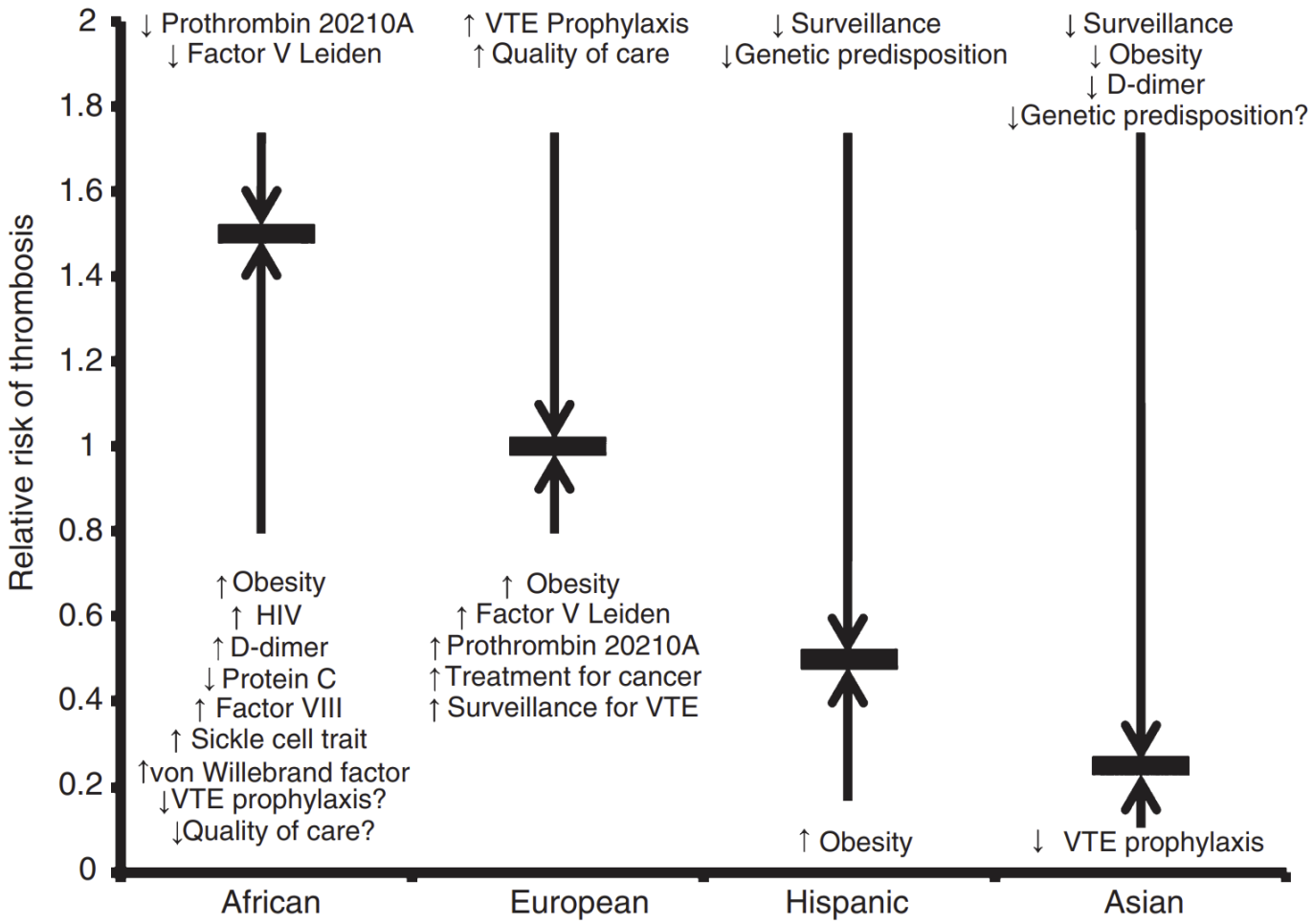
# Risk factors prevalent among Hispanics

## Nature and Nurture




*Heiss, et al. Diabetes care 2014*
*Zakai et al JTH 2011*

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# Risk factors prevalent among Hispanics

## Nature and Nurture

Genetic hypercoagulability

(factor V Leiden, prothrombin gene mutation)

Acquired hypercoagulability

(antiphospholipid antibody syndrome)

Inflammation (nature, nurture, both?)

Hypercholesterolemia (nature, nurture, both?)

Diabetes mellitus (nature, nurture, both?)

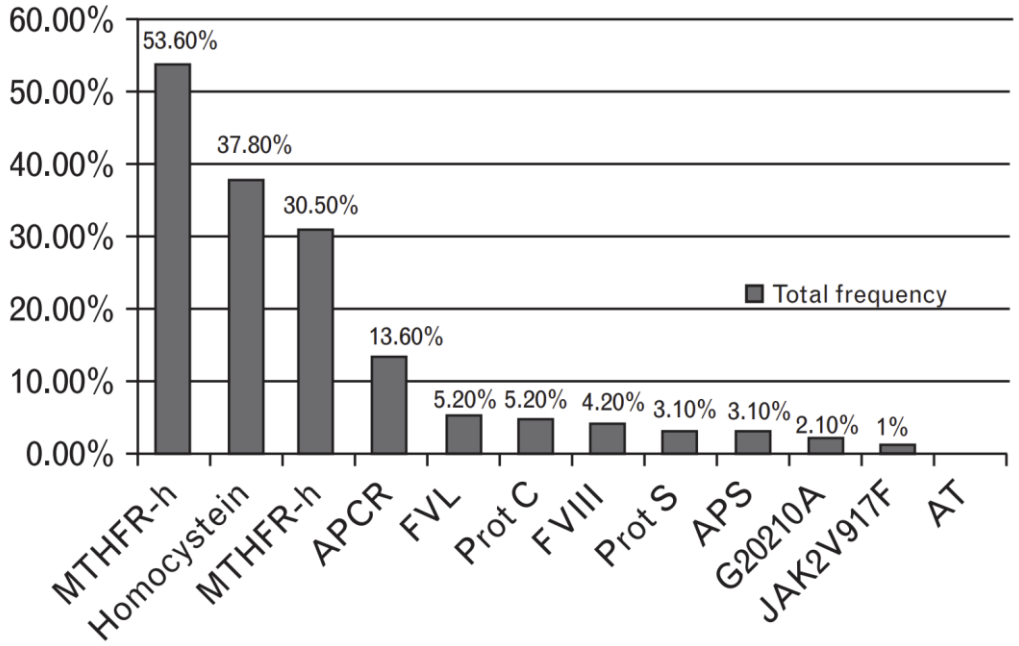
Obesity (nurture, nature, both?)

Hypertension (nurture, nature, both?)

Cigarette smoking

Immobility

Healthcare disparities



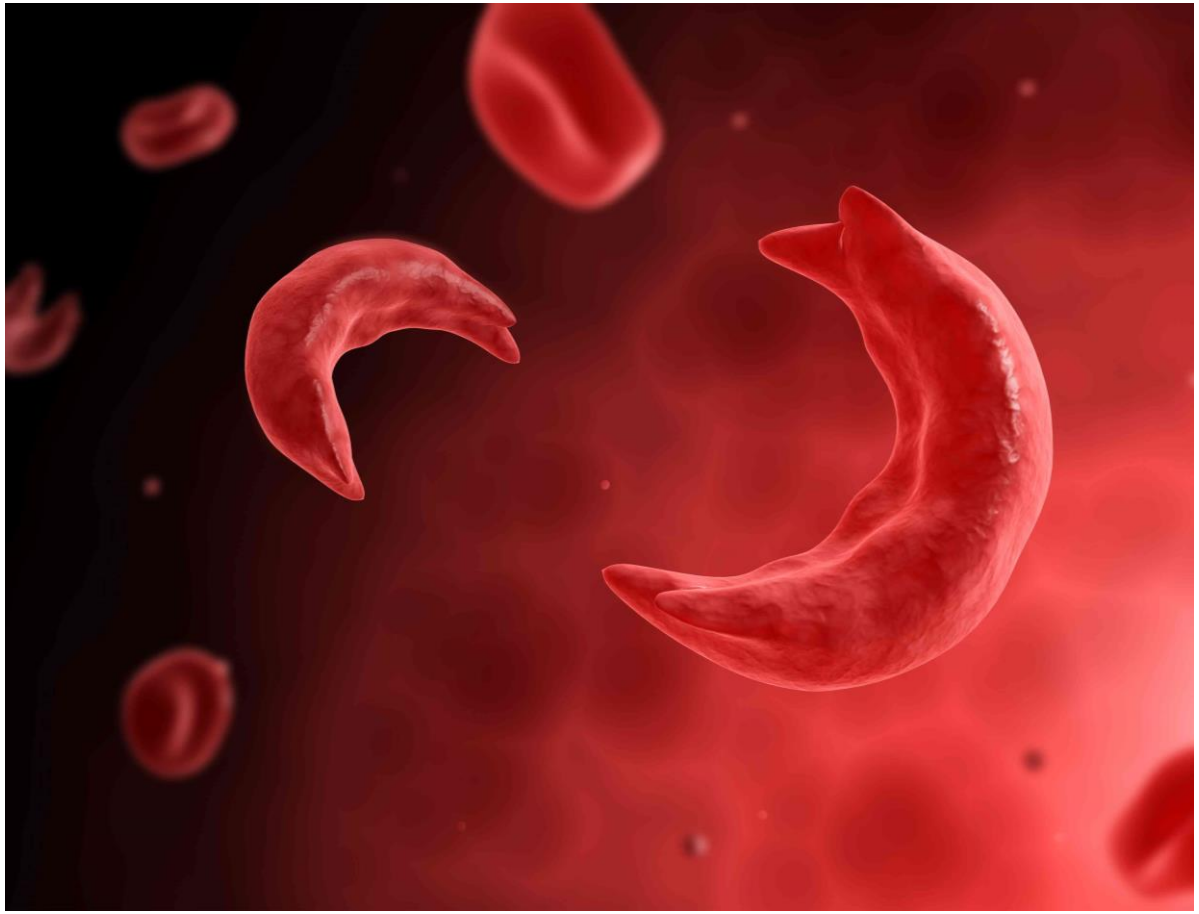

*Goldhaber S. Circulation. 2014*
*Fernandez M. Nutrients 2021*
*Lacayo-Lenero et al Blood Coag and Fibrinolysis 2016*

# Risk factors Prevalent Among Hispanics

**Nature and Nurture**

- SCD is the most common genetic disease within the USA
- After African Americans, Latinx are the second largest population affected by Sickle Cell Disease (SCD) in the U.S.
- Among California's 6,837 residents with SCD

  **7.3% were Latinx**



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*Valle J . Plos One 2022*

# Risk factors prevalent among Hispanics

## Nature and Nurture

Positive aCL IgA and aβ2GPI IgA at a single time point were independently associated with future ASCVD events.

**Racial and Ethnic Variation of Antiphospholipid Antibodies in Dallas Heart Study (N = 2427)**

| aPL | No. positive (% manufacturer's threshold) | | | | |
|---|---|---|---|---|---|
| | Black (n = 1244) | Hispanic (n = 339) | White (n = 796) | Other[a] (n = 48) | Adjusted *P* value[b] |
| aCL IgG | 15 (1.2) | 1 (0.3) | 10 (1.3) | 0 | .54 |
| aCL IgM | 84 (6.8) | 16 (4.7) | 55 (6.9) | 1 (2.0) | .54 |
| aCL IgA | 8 (0.6) | 1 (0.3) | 2 (0.3) | 0 | .61 |
| aβ2GPI IgG | 15 (1.2) | 2 (0.6) | 4 (0.5) | 0 | .54 |
| aβ2GPI IgM | 27 (2.2) | 5 (1.5) | 30 (3.8) | 1 (2.0) | .23 |
| aβ2GPI IgA | 37 (3.0) | 22 (6.5) | 2 (0.3) | 1 (2.0) | <.001 |
| aPS/PT IgG | 12 (1.0) | 3 (0.9) | 3 (0.4) | 0 | .54 |
| aPS/PT IgM | 48 (3.9) | 11 (3.2) | 23 (2.9) | 0 | .54 |
| Any positive | 198 (15.9) | 51 (15) | 102 (12.8) | 2 (4.0) | .23 |
| Three positive aPL | 11 (0.9) | 2 (0.6) | 4 (0.5) | 0 | .69 |



*Zuo et al, JAMA Netw Open. 2023*

# Risk factors prevalent among Hispanics

**Nature and Nurture**

Hispanics have a high prevalence of obesity.

| | |
|---|---|
| Non-Hispanic Black adults | (49.9%) |
| **Hispanic adults** | **(45.6%)** |
| Non-Hispanic White adults | (41.4%) |
| non-Hispanic Asian adults | (16.1%) |

**SNPs associated with obesity, fat distribution, waist circumference, triglyceride levels, and insulin resistance in Mexican American people**

**A traditional Latinx diet tends to be high in carbohydrates, representing approximately 50% of energy intake across Latinx backgrounds**

**Access to health care is limited owing to the high rate of uninsured people in the US Latinx population, with 16.1% uninsured in 2017**


**The association between obesity and length of residency in the United States is mediated primarily by sedentary behavior**

*Stierman et al. National Health Statistics 2021*
*Ko A, et al Nat Commun. 2014*
*Berchick ER, et al 2017*

*Boeta-Lopez K, et al Obes Sci Pract. 2017*
*Siega-Riz AM, et al. Am J Clin Nutr. 2014*
*Caballero AE. Am J Med. 2011*

# Risk factors prevalent among Hispanics

## Nature and Nurture


### Hypertension

**1 / 4**

Stress

Inverse to # traumatic events

Simpatia


### Hyperlipidemia

**1 / 2**

Age, sex, diabetes, low physical activity, elevated BMI, and alcohol

Spanish preference and lower education

### Diabetes

**1 / 5**

Age, BMI, and duration of US residence

Inverse to education and household income

### Smoking

**1 / 4**

Male sex, younger age, lower education and income, being US-born, and greater acculturation

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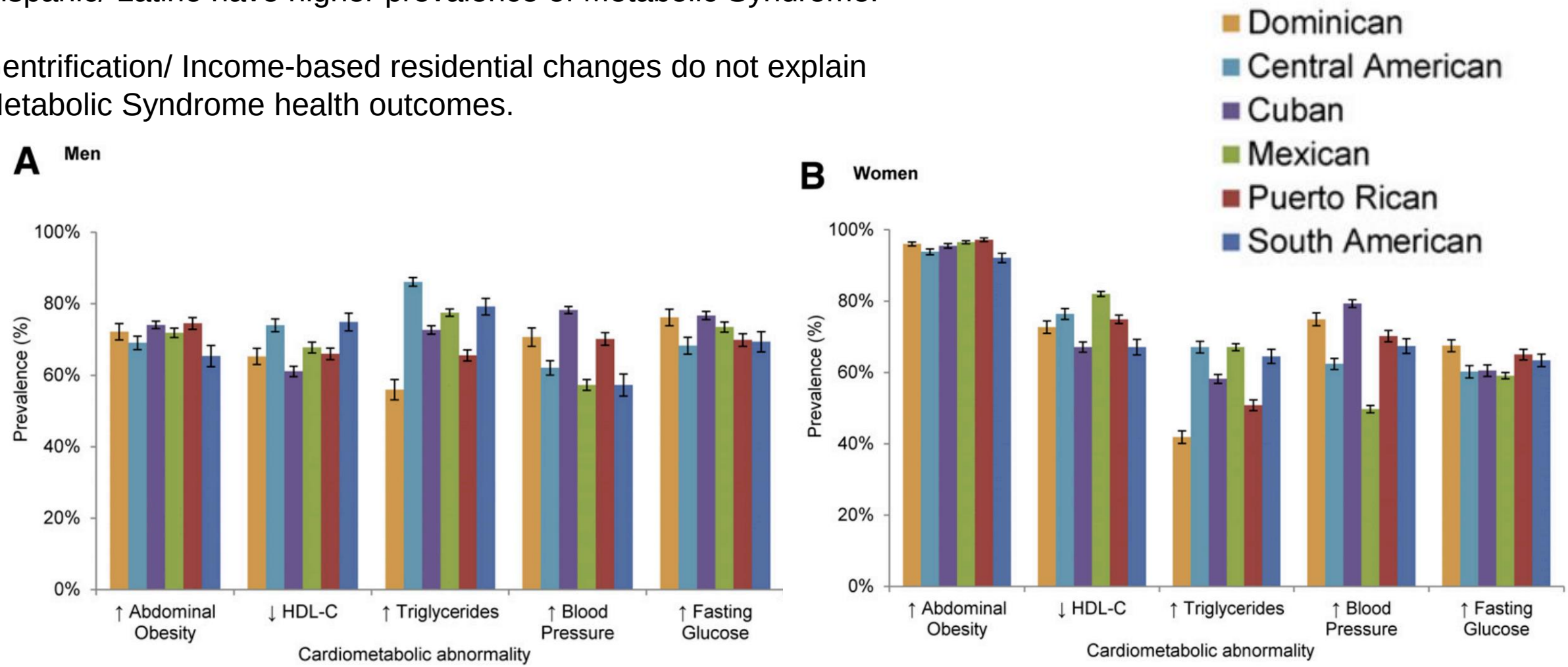
*Pirzada et al Current Atherosclerosis Reports (2023)*

# Risk factors prevalent among Hispanics

Hispanic/ Latino have higher prevalence of Metabolic Syndrome.

Gentrification/ Income-based residential changes do not explain Metabolic Syndrome health outcomes.

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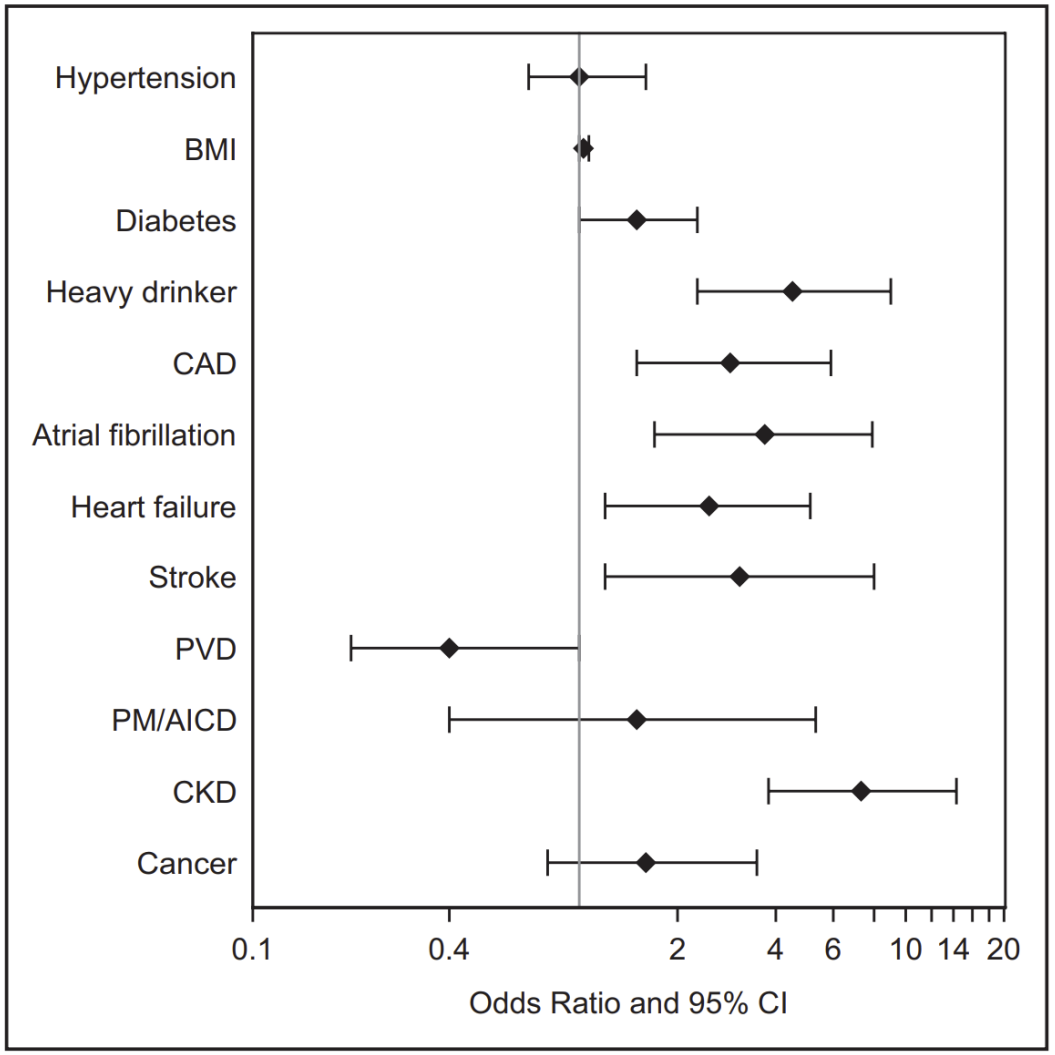
*Heiss, et al. Diabetes care 2014*

# Risk factors prevalent among Hispanics

**Nature and Nurture**




The strongest predictor of sudden Cardiac Death was chronic kidney disease.

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*Reinier et al J Am Heart Assoc. 2023*

# Risk factors prevalent among Hispanics

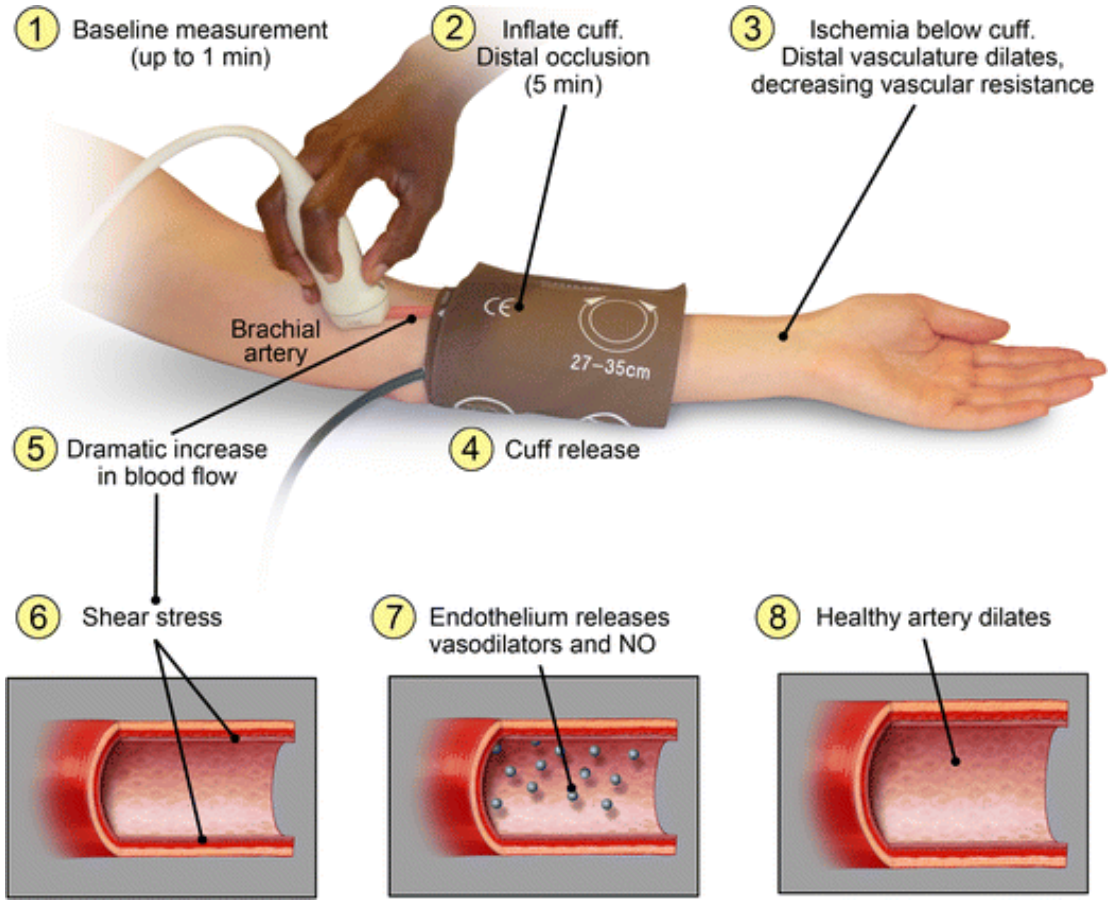
## Nature and Nurture

# Discussion Points

- Dissect which thrombotic and cardiovascular risk factors are prevalent among Hispanics
- Contrast the epidemiology of thrombotic and cardiovascular disease among Hispanics relative to other groups
- Deconstructing a Paradox
- Discuss cultural competence factors that may impact antithrombotic care delivery for Hispanics

# Risk factors prevalent among Hispanics

Age-dependent cardiometabolic biomarkers and an FMD response worse Mexican Americans without previous CVD.




**No significant association was noted between FMD response and weight, BMI, or waist circumference.**

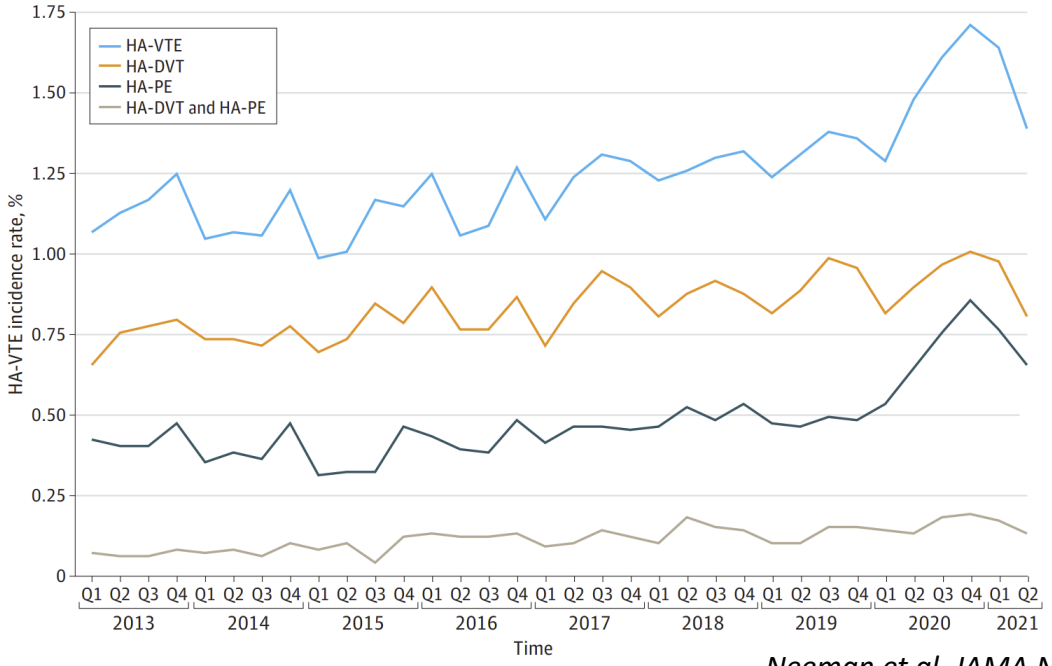
*Garcia-Sayan et al Am J Cardiol 2023*
*Weissgerber et al Curr Hypertens Rep 2014*

# Epidemiology of thrombotic and CV disease among Hispanics

VTE - PAD - CAD -

| Variable | Patients, No./total (%) | | Univariate regression | | Multivariable regression | |
|---|---|---|---|---|---|---|
| | Admissions without HA-VTE (n = 1 098 171) | Admissions with HA-VTE (n = 13 843) | OR (95% CI) | *P* value | aOR (95% CI) | *P* value |
| Race and ethnicity | | | | | | |
| Asian | 146 242 (13.3) | 1230 (8.9) | 0.63 (0.60-0.67) | <.001 | 0.65 (0.61-0.69) | <.001 |
| Black | 124 432 (11.3) | 2105 (15.2) | 1.40 (1.34-1.47) | <.001 | 1.21 (1.16-1.28) | <.001 |
| Hispanic | 153 596 (14.0) | 1647 (11.9) | 0.83 (0.79-0.87) | <.001 | 0.81 (0.77-0.86) | <.001 |
| Non-Hispanic White | 647 999 (59.0) | 8594 (62.1) | 1.14 (1.10-1.18) | <.001 | 1 [Reference] | NA |
| Other or unknown | 25 902 (2.4) | 267 (1.9) | 0.81 (0.72-0.92) | <.001 | 0.81 (0.72-0.92) | .001 |

**HA-VTE events occurred in 1.2% of medical admissions, increased over time**
**HA VTE rates in Hispanics were lower.**

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*Neeman et al, JAMA Network Open. 2022*

# Epidemiology of thrombotic and CV disease among Hispanics



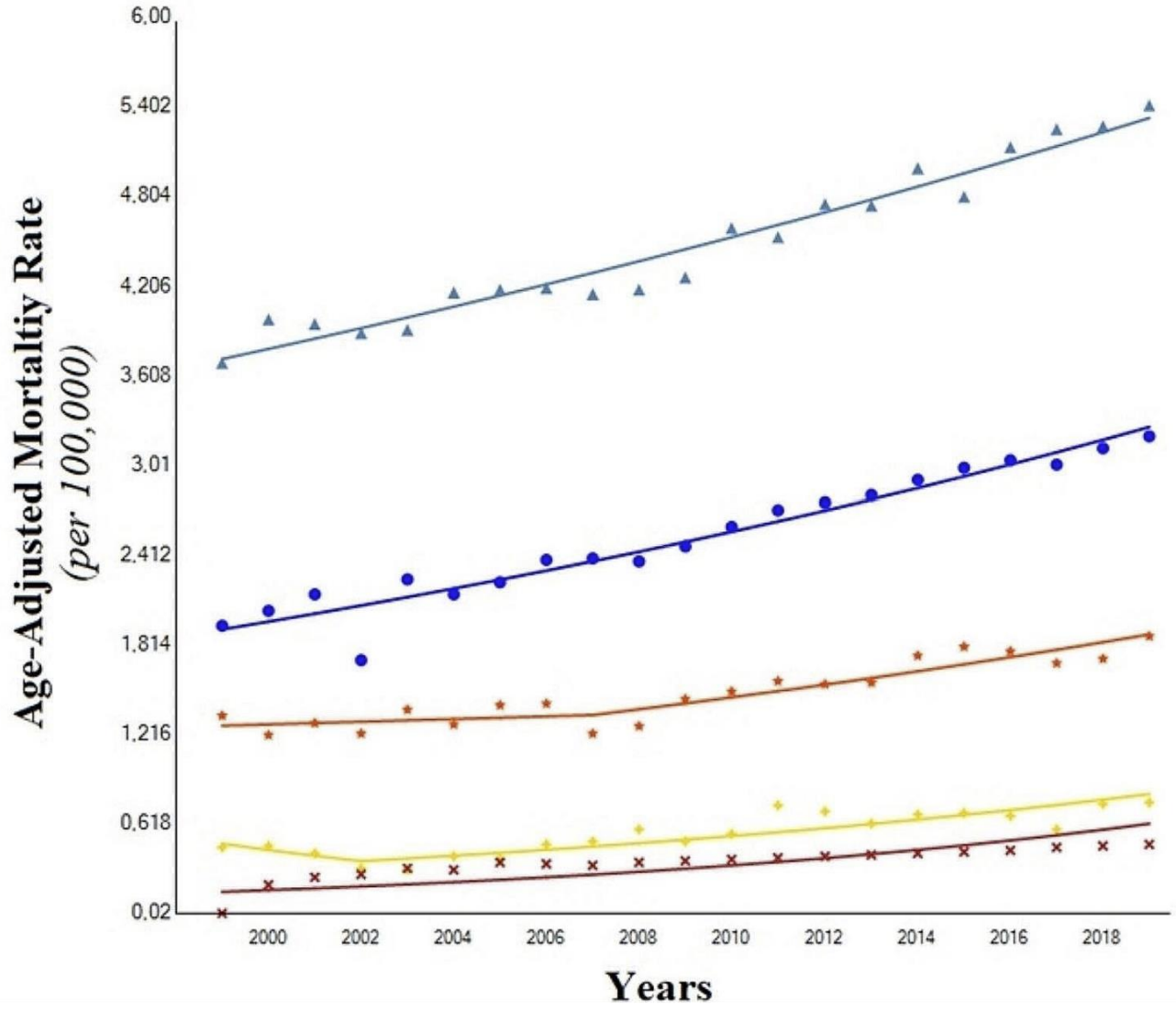
| Measure | VTE[a] | | DVT only | | PE ± DVT | |
|---|---|---|---|---|---|---|
| | IR | 95% CI | IR | 95% CI | IR | 95% CI |
| Crude overall | 2.26 | (2.19–2.34) | 1.35 | (1.29–1.41) | 0.91 | (0.87–0.96) |
| Age-adjusted[b] | 2.47 | (2.39–2.55) | 1.47 | (1.41–1.54) | 0.99 | (0.93–1.04) |
| Race/ethnicity[b] | | | | | | |
| Asian/Pacific Islander | 0.63 | (0.43–0.91) | 0.41 | (0.26–0.65) | 0.22 | (0.11–0.41) |
| Non-Hispanic black | 3.25 | (3.02–3.49) | 1.97 | (1.80–2.16) | 1.27 | (1.13–1.43) |
| Hispanic | 0.67 | (0.54–0.82) | 0.39 | (0.30–0.51) | 0.27 | (0.19–0.37) |
| Native American | 1.25 | (0.98–1.58) | 0.69 | (0.50–0.95) | 0.56 | (0.39–0.80) |
| Non-Hispanic white | 2.71 | (2.61–2.83) | 1.59 | (1.50–1.67) | 1.12 | (1.06–1.20) |

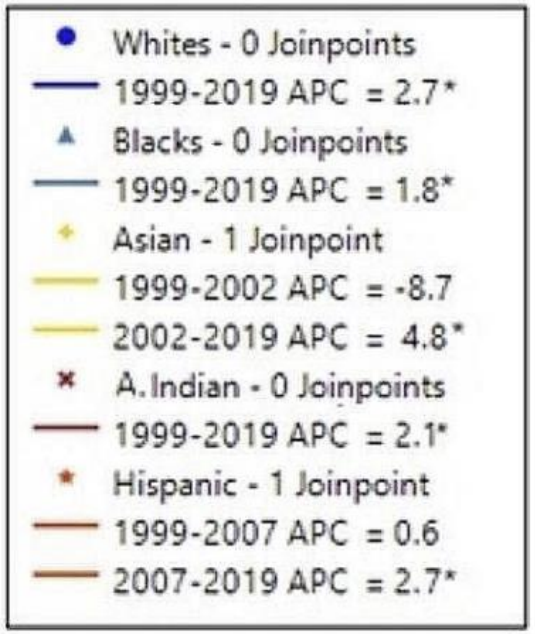


*Wendelboe et al. Thromb Haemost 2021*

# Epidemiology of thrombotic and CV disease among Hispanics



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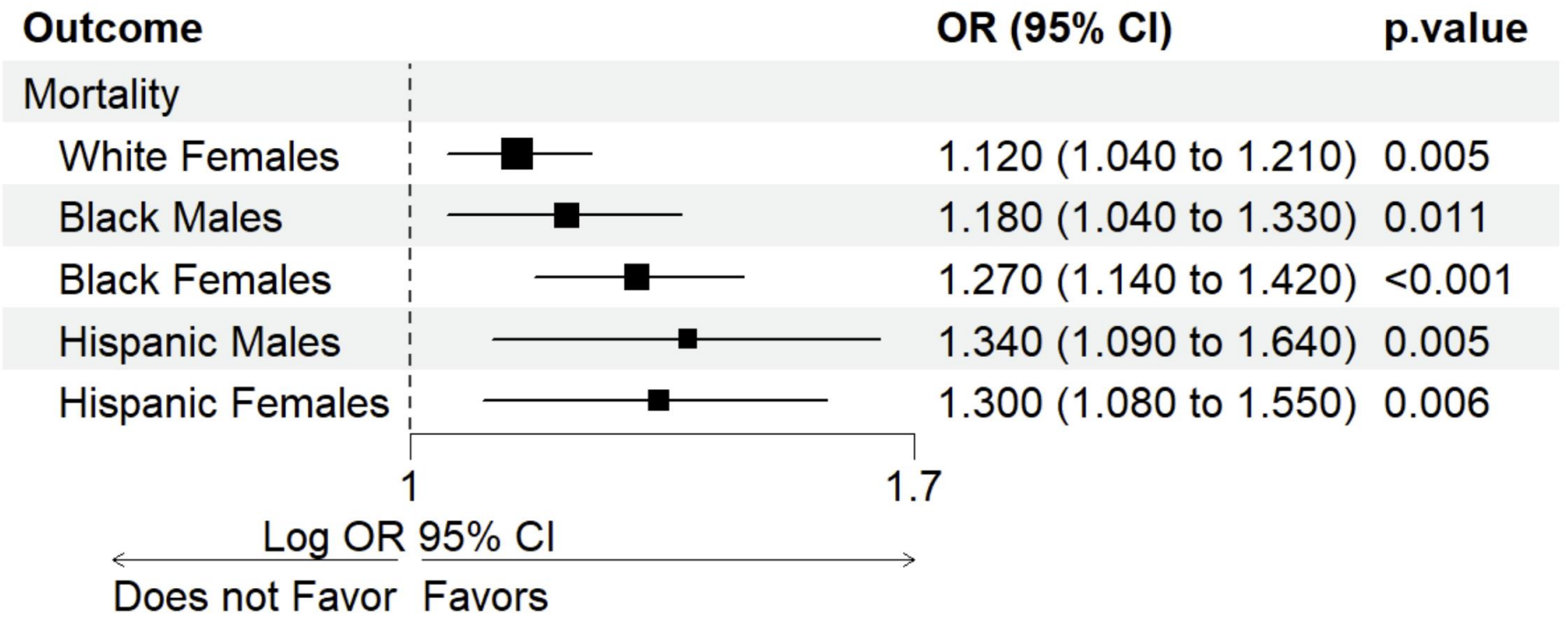
*Zuin et al JTT 2014*

# Epidemiology of thrombotic and CV disease among Hispanics



Black and Hispanic patients, female patients
less likely to undergo CDT for PE compared to White male patients

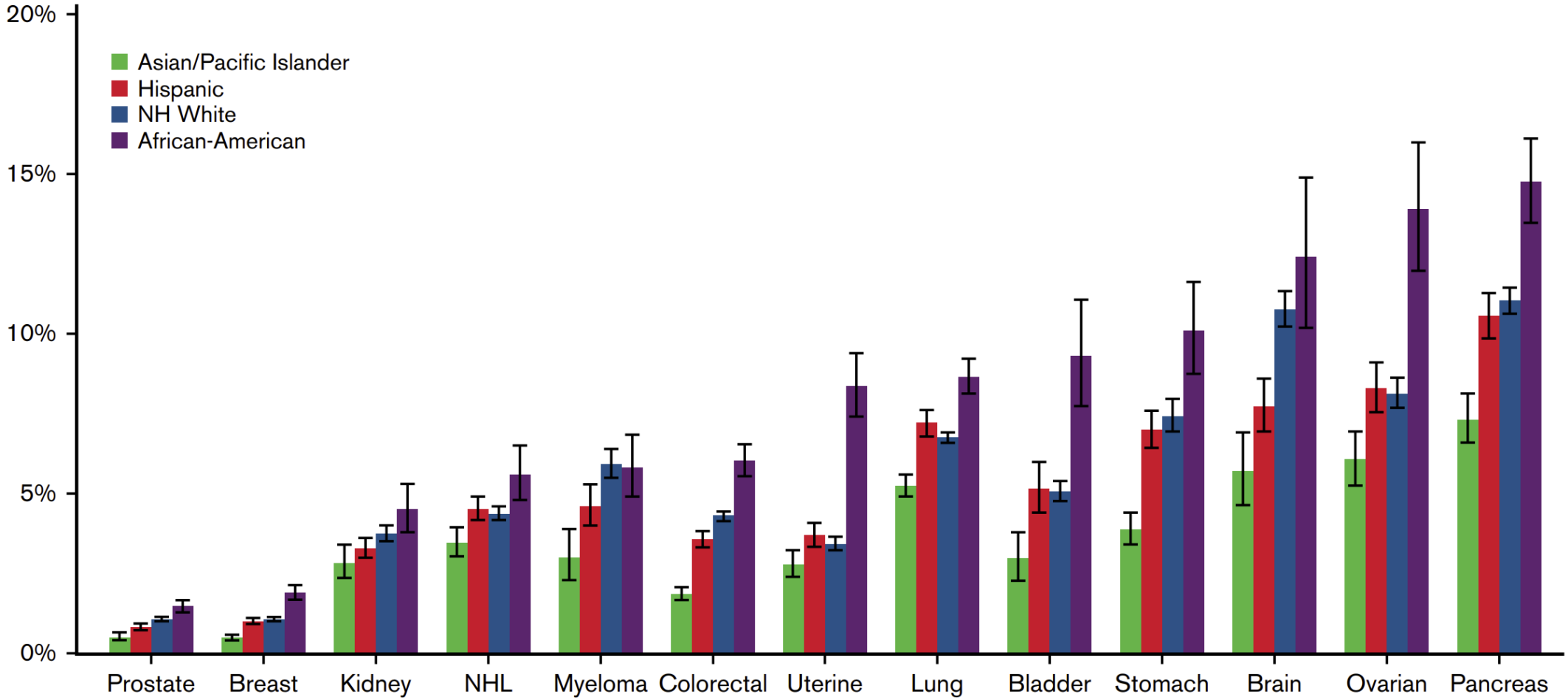





*Sathianathan et al JVS 2024*

# Epidemiology of thrombotic and CV disease among Hispanics

VTE - PAD - CAD -

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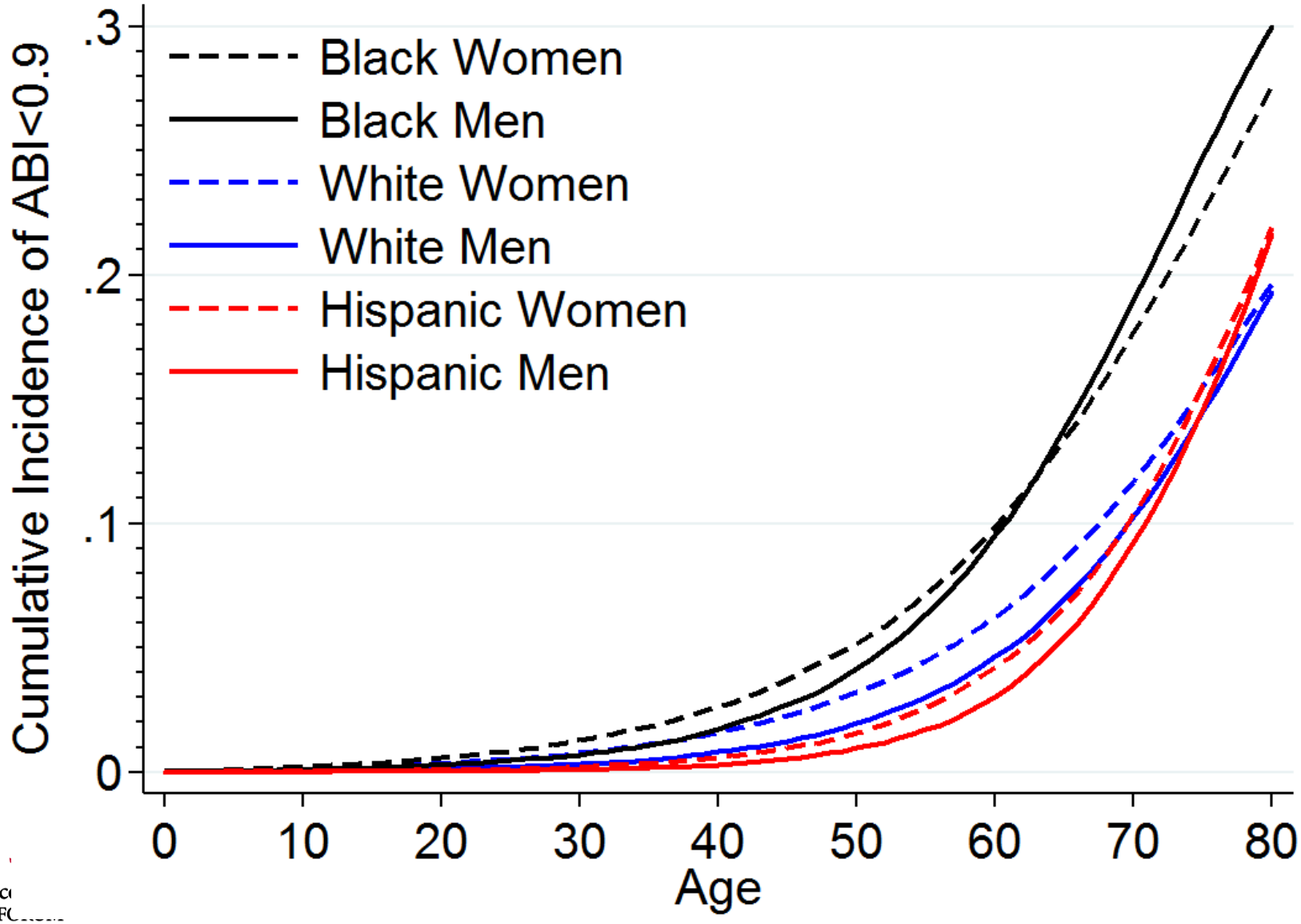
*Datta et al, Blood Advances 2022*

# Epidemiology of thrombotic and CV disease among Hispanics



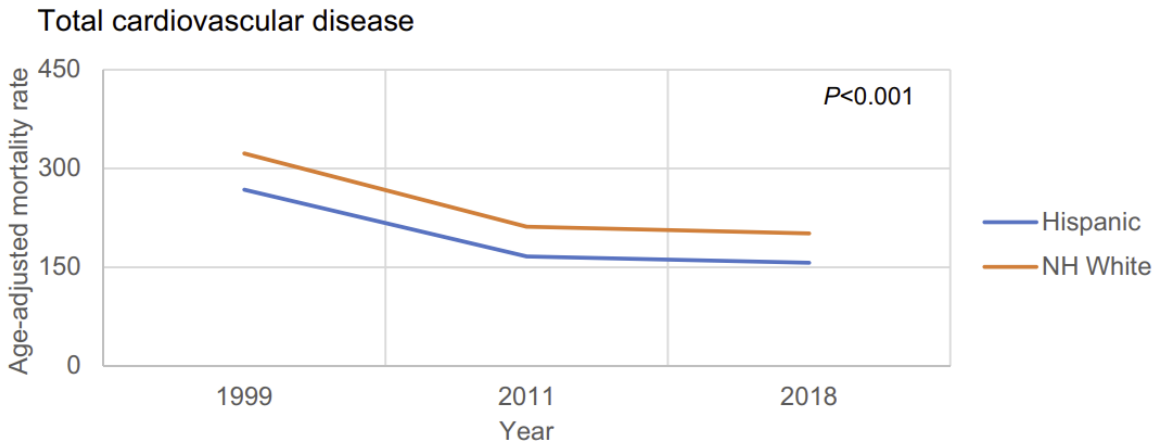


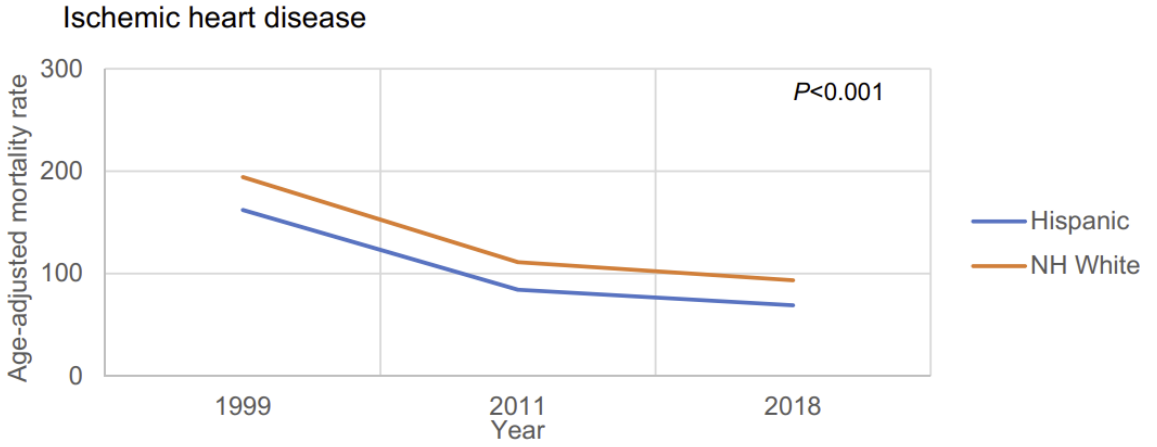

Compared with whites, blacks had higher odds and Hispanics had lower odds of having PAD

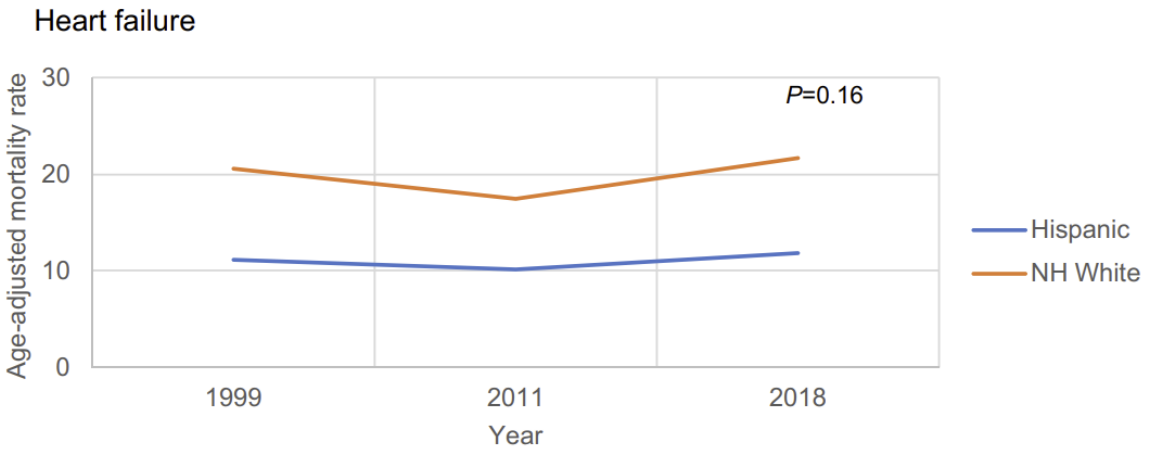
*Matsushita et al JAHA 2019*

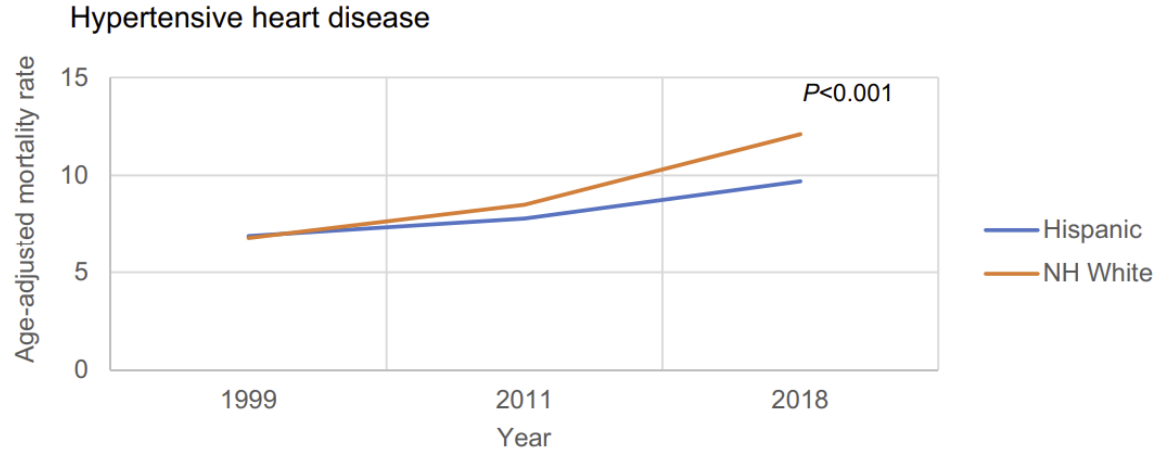
# Epidemiology of thrombotic and CV disease among Hispanics



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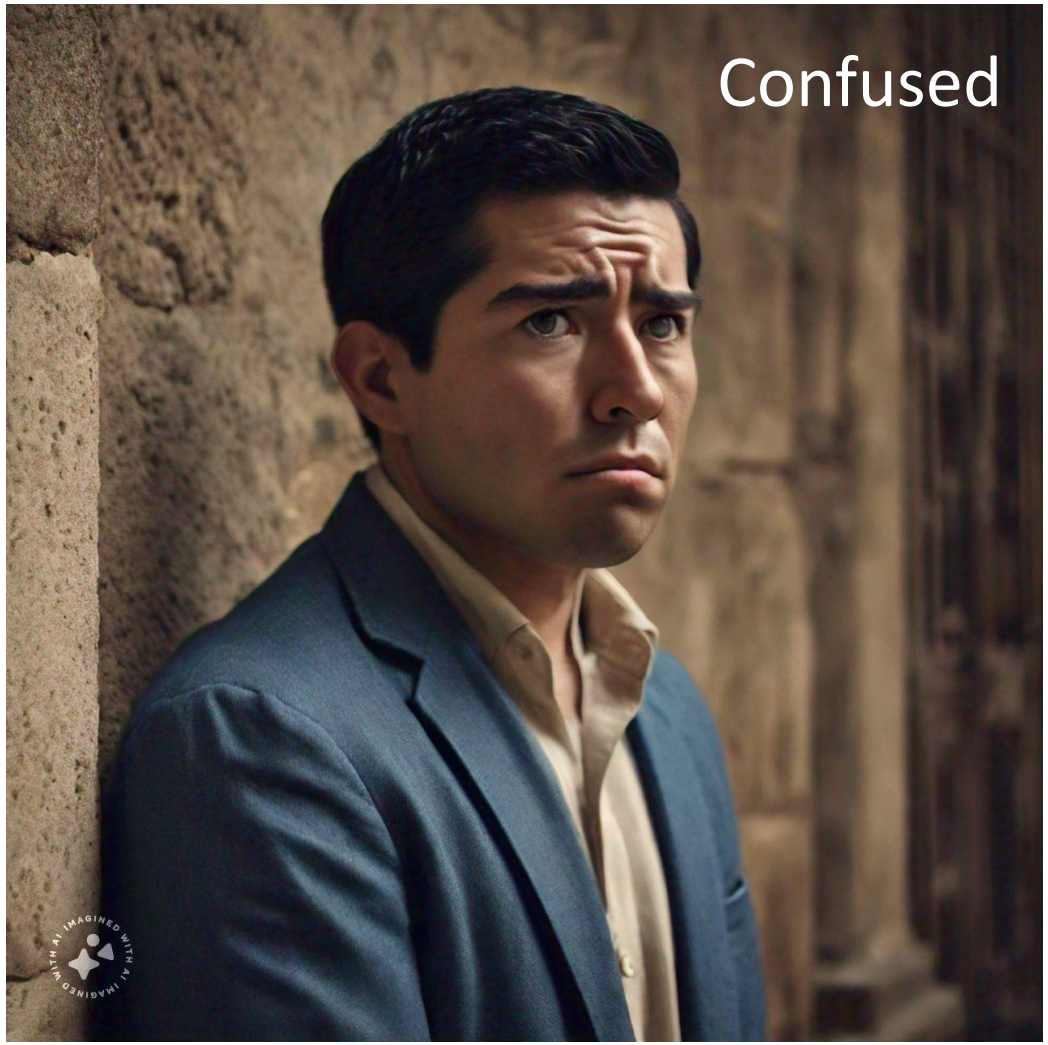
*Khan et al J Am Heart Assoc. 2022*

# Epidemiology of thrombotic and CV disease among Hispanics




**Consistently, Latinos (vs NLW) have lower overall mortality rates for chronic diseases such as cardiovascular disease and almost all cancers despite greater risk for both.**

*Balfour PC Jr., et al J Lat Psychol. 2016*
*Leigh JA, et al Curr Atheroscler Rep. 2016*
*Dominguez K, et al MMWR 2015.*

# Discussion Points

- Dissect which thrombotic and cardiovascular risk factors are prevalent among Hispanics
- Contrast the epidemiology of thrombotic and cardiovascular disease among Hispanics relative to other groups
- Deconstructing a Paradox
- Discuss cultural competence factors that may impact antithrombotic care delivery for Hispanics

# Deconstructing a Paradox

# Deconstructing a Paradox

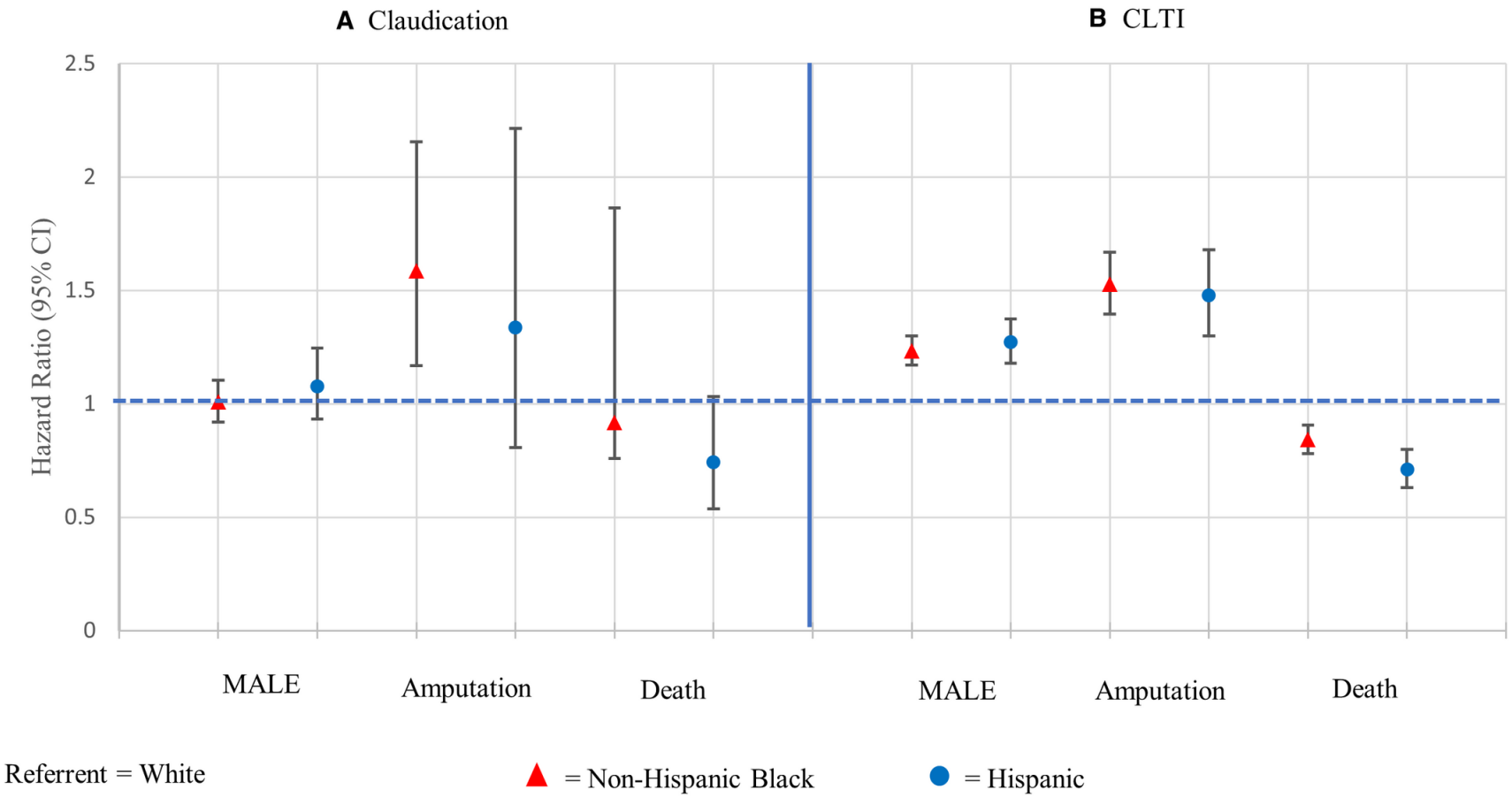
"Hispanic residents in the United States exhibit **health advantages** over the general population despite relatively low socioeconomic status…"

"Hispanic Paradox" … has been attributed to healthier **diet** and other aspects of **lifestyle**, high levels of informal **social support** that mitigate risk factors and social stressors attendant to low SES and ethnic minority status, and **selective migration** whereby healthier individuals are more likely to migrate to the United States



*Markides, et al. Public Health Reports 1986*
*Walker et al. Journal of Aging and Health 2023*

# Deconstructing a Paradox




Hispanic patients with PAD are more likely than White patients with PAD to undergo amputation and have complications after lower extremity revascularization

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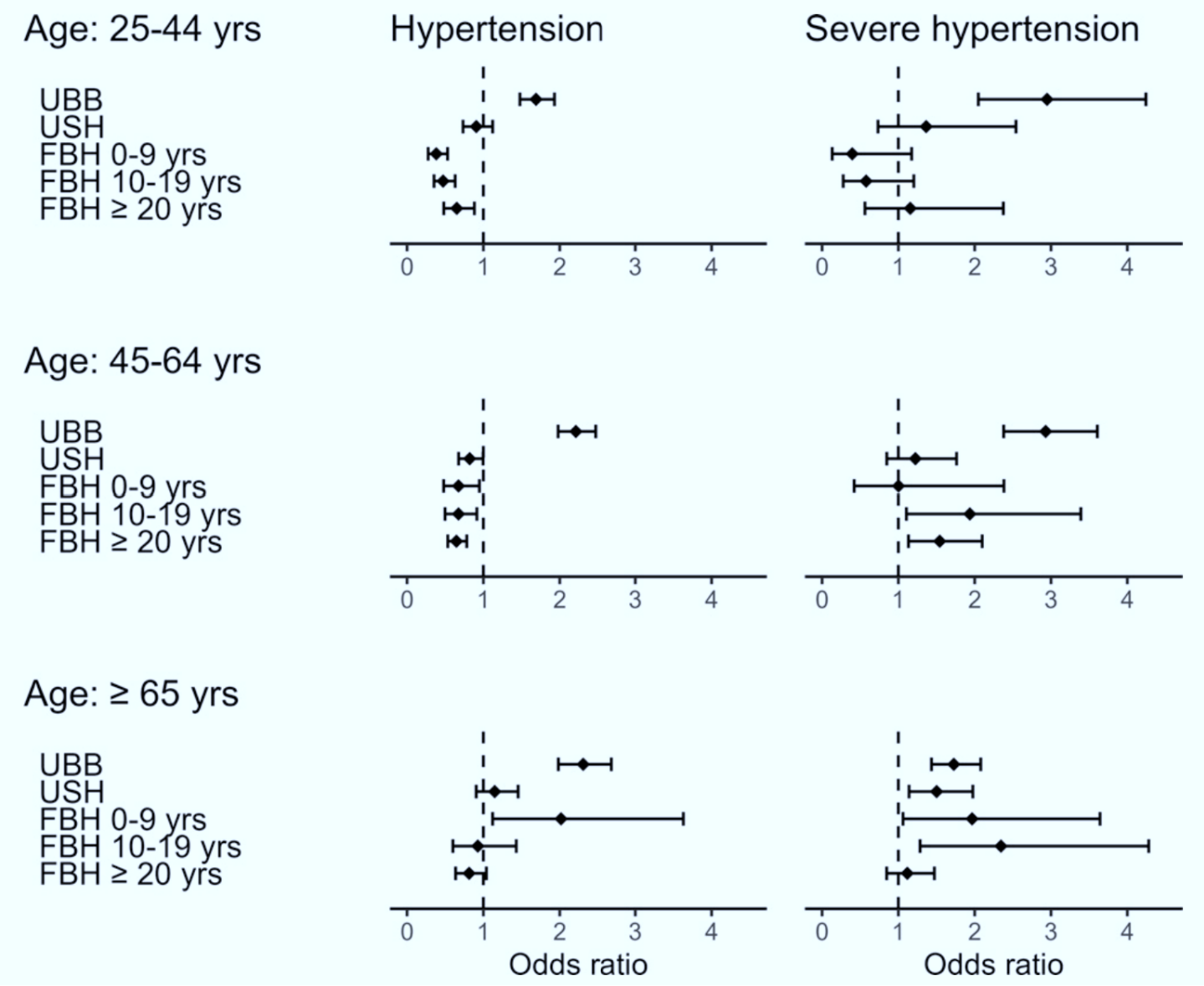
*McDermott et al JACC 2023*
Kalbaugh, et al JAHA 2022

# Deconstructing a Paradox




Longer length of residency in US
→ poorer health outcomes

If migrate late in life
→greater risk of functional disability

UBB = US Born Black,
UBH = US Born Hispanic
FBH = Foreign Born Hispanic
0-9, 10-19, and ≥ 20 years of residency

*Walker et al.*
*Journal of Aging and Health 2023*

An

# Deconstructing a Paradox

**Undocumented Latino immigrants had lower predicted probabilities of reporting any health condition**

*Lopez Mercado et al. Am J Prev Med 2023*

**Values were not missing at random but instead were associated with age, sex, race/nativity, and education**

*Walker et al. Journal of Aging and Health 2023*

$$\frac{n}{N}$$

**Lower smoking prevalence among Hispanic adults**

*Blue et al. Int J of Epid 2011*

**Diverse community**

*Arias et al SSM - Population Health 2020*

**Sofrito consumption lowers inflammatory markers CRP and TNF-α.**

*Urquiza et a Aging Male. 2019*

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# Deconstructing a Paradox

Origins in many different countries
Diverse cultural, economic, social and political characteristics
Diverse histories of immigration
Different patterns of assimilation and acculturation into US culture

| | | | | |
|---|---|---|---|---|
| **Record Has SSN** | | | | |
| No | —— | | —— | |
| Yes | 1.284*** | 0.097 | 1.308*** | 0.107 |
| **Race** | | | | |
| White | —— | | —— | |
| Black | 0.0600 | 0.128 | −0.0405 | 0.154 |
| AIAN | 0.5958* | 0.266 | −0.1244 | 0.443 |
| API | −0.1737 | 0.242 | −0.3471 | 0.245 |
| Some Other Race | 0.0248 | 0.055 | 0.0196 | 0.057 |
| Multiple Race | −0.1356 | 0.182 | −0.2631 | 0.174 |
| **Hispanic Sub-Group** | | | | |
| Mexican | —— | | —— | |
| Cuban | 0.1691** | 0.062 | 0.1433* | 0.065 |
| Dominican | −0.4277** | 0.145 | −0.3686** | 0.115 |
| Central American | −0.5149*** | 0.096 | −0.4666*** | 0.091 |
| Puerto Rican | 0.1370* | 0.064 | 0.0996 | 0.066 |
| South American | −0.2745** | 0.084 | −0.2914*** | 0.083 |
| Other Hispanic | 0.1117 | 0.124 | 0.1850 | 0.111 |

## Diversity and Mortality within Foreign born Hispanics

*p< .05, **p < .01, ***p < .001.

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*Arias et al SSM - Population Health 2020*

# Deconstructing a Paradox

Origins in many different countries
Diverse cultural, economic, social and political characteristics
Diverse histories of immigration
Different patterns of assimilation and acculturation into US culture

| | | | | |
|---|---|---|---|---|
| **Record Has SSN** | | | | |
| No | —— | | —— | |
| Yes | 1.936*** | 0.199 | 2.176*** | 0.200 |
| **Race** | | | | |
| White | —— | | —— | |
| Black | 0.3587* | 0.170 | 0.1736 | 0.174 |
| AIAN | 0.4282** | 0.146 | 0.0517 | 0.201 |
| API | −0.4166 | 0.362 | 0.3222 | 0.277 |
| Some Other Race | −0.0209 | 0.062 | 0.1693** | 0.061 |
| Multiple Race | 0.1672 | 0.150 | 0.3488* | 0.149 |
| **Hispanic Sub-Group** | | | | |
| Mexican | —— | | —— | |
| Cuban | −0.0540 | 0.166 | −0.3613 | 0.240 |
| Dominican | −0.6698 | 0.420 | 0.0725 | 0.350 |
| Central American | −0.8660* | 0.350 | −0.1176 | 0.272 |
| Puerto Rican | 0.0602 | 0.089 | 0.0437 | 0.103 |
| South American | −0.2957 | 0.255 | 0.0802 | 0.226 |
| Other Hispanic | 0.0668 | 0.059 | 0.0373 | 0.060 |

## Diversity and Mortality within US - born Hispanics

*p< .05, **p < .01, ***p < .001.

*Arias et al SSM - Population Health 2020*

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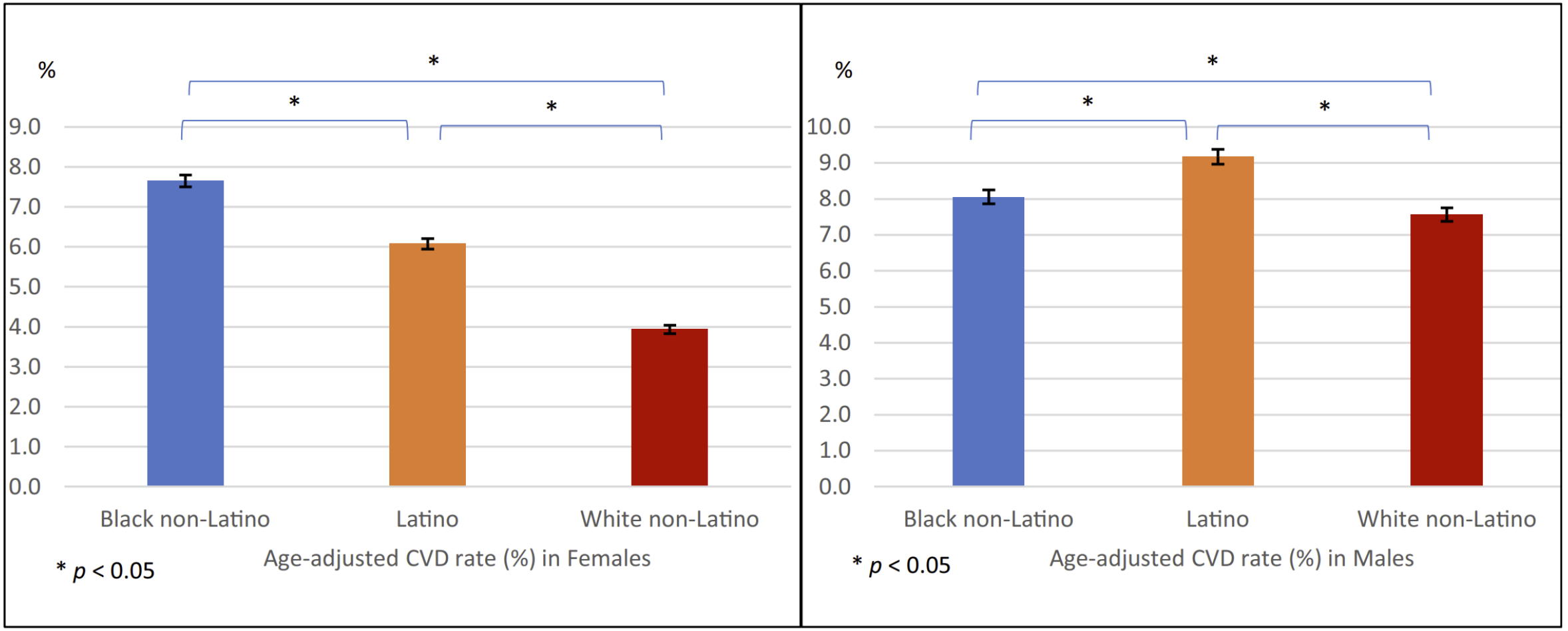
# Deconstructing a Paradox




**Age-adjusted cardiovascular disease (CVD) prevalence for males and females by ethnic/racial group.**

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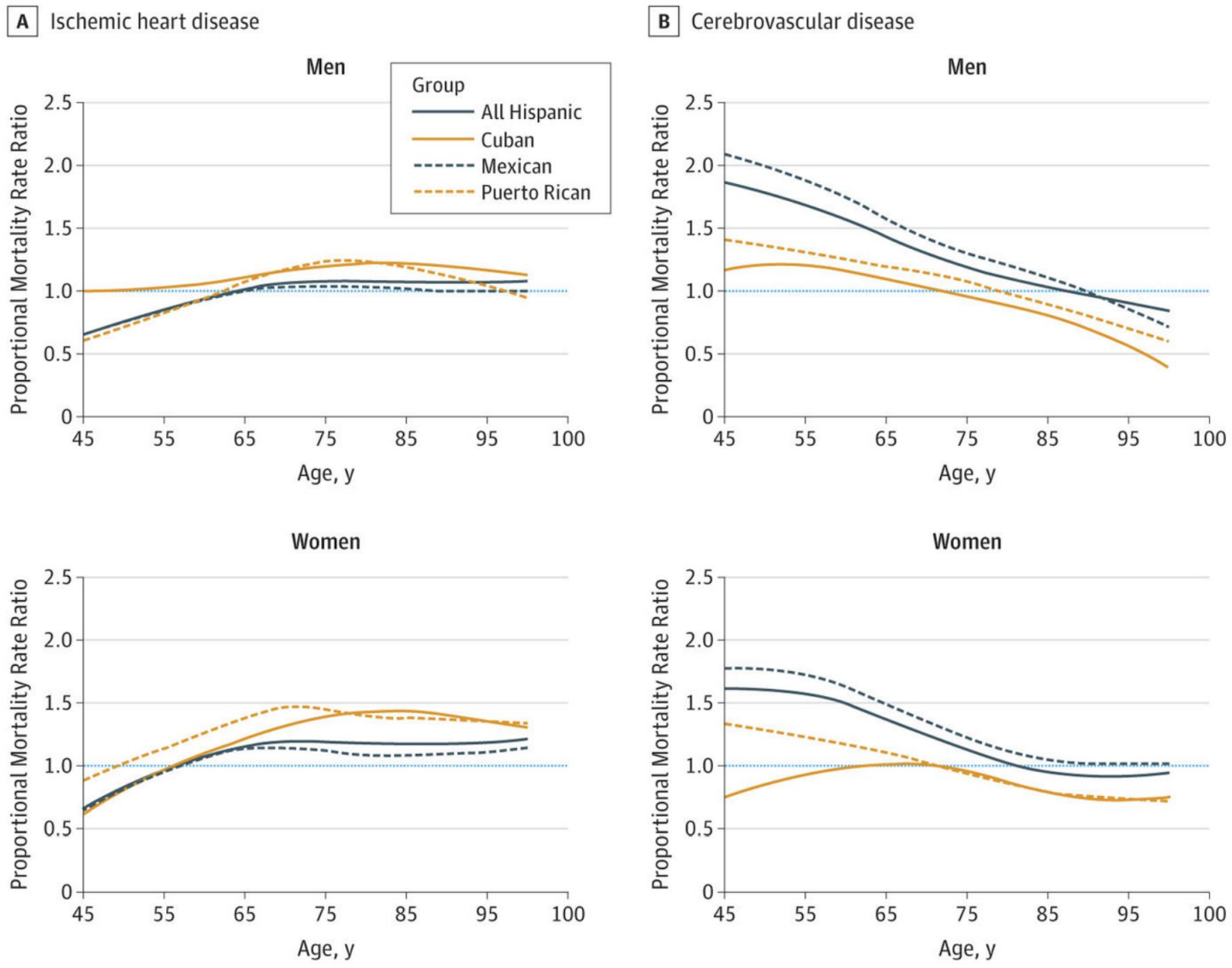
*Montanez-Valverde et al J Gen Intern Med 2022*

# Deconstructing a Paradox




**Heterogeneity in cause-specific CVD mortality among the 3 largest Hispanic subgroups**

*Rodriguez F, et al JAMA Cardiol. 2017.*

# Discussion Points

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# Antithrombotic Care delivery for Hispanics

- Black and Hispanic patients have greater odds of ED DAMA than White patients in unadjusted analysis.
  Disparities were reversed after patient-level and hospital-level risk adjustment
- Socioeconomic status had greater impact than selected behavioral factors on increased risk of hypertension and severe hypertension
- Fewer years of residency, may be more vulnerable due to lower socioeconomic status, language barriers, and lack of health insurance coverage
- Policies directed toward improving access to, and quality of, medical care to these at-risk populations is likely critical to addressing these disparities.

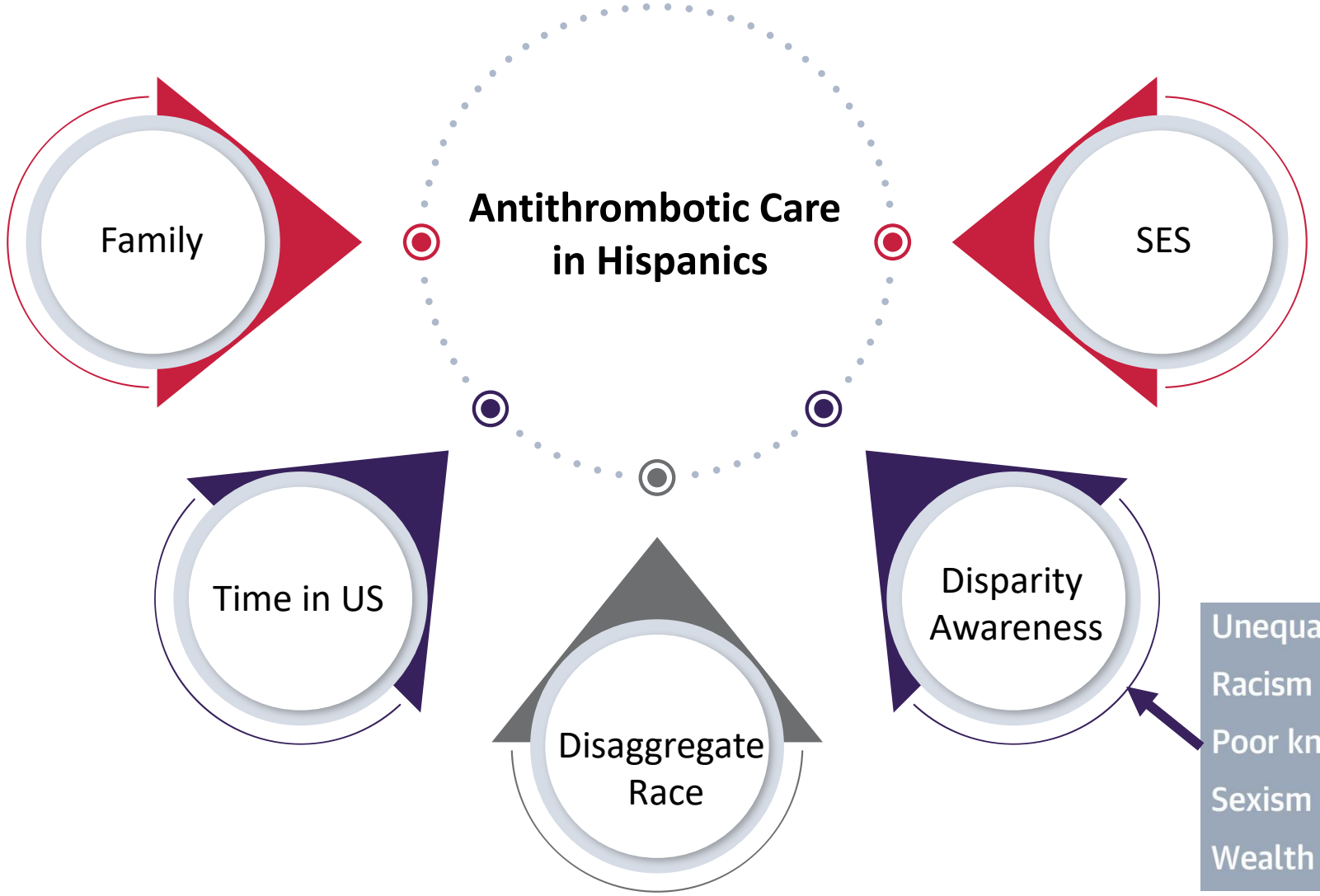


*Walker et al. Journal of Aging and Health 2023*
*Tsai et al, JAMA Network Open. 2023*

# Antithrombotic Care delivery for Hispanics

The pan-ethnic terms Hispanic and Latina/o are insufficient for describing how multiple intersecting social determinants shape health in Latino population subgroups.

# Antithrombotic Care delivery for Hispanics

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# Discussion Points

- Dissect which thrombotic and cardiovascular risk factors are prevalent among Hispanics
- Contrast the epidemiology of thrombotic and cardiovascular disease among Hispanics relative to other groups
- Deconstructing a Paradox
- Discuss cultural competence factors that may impact antithrombotic care delivery for Hispanics

# Questions?

# Thank you to our speakers!

## Presenter

**Alfonso Tafur**
Director, Vascular Medicine &
Cardiovascular Research
Director of Vascular Medicine
*Endeavor Health*
@AJTafur

## Moderators

**Julia Mulheman, PharmD, CACP**
Pharmacy Manager
*Cleveland Clinic Health System*

**Julia Bayadinova, NP, MN**
Nurse Practitioner
*St. Joseph's Healthcare Hamilton*

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# How to Claim CE

1) Go to: http://acf.cmecertificateonline.com/
2) Select "**Thrombosis and Antithrombotic Care in the Hispanic Community**"
3) Evaluate the program
4) Print certificate for your records

**Claim Credit:**
**http://acf.cmecertificateonline.com/**

**Eligible for 1.00 credits of education in medical ethics and/or professional responsibility.**

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INTERPROFESSIONAL CONTINUING EDUCATION

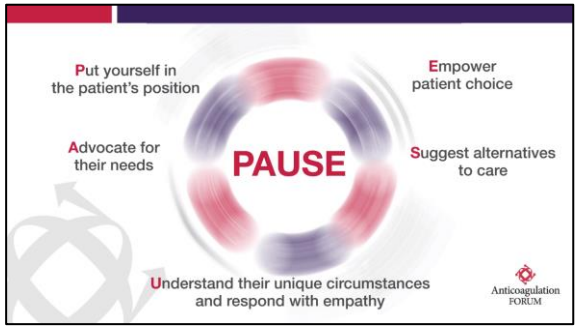
# Inclusion, Diversity, Equity, and Allyship (IDEA) Initiative

## Goals

- Engage in active anti-racist efforts that will create meaningful change
- Be intentional about diversity in AC Forum leadership, membership, and programming
- Expand access to opportunities for Black and other clinicians of color in anticoagulation and related fields
- Increase awareness of structural racism and its impacts on health inequities/disparities

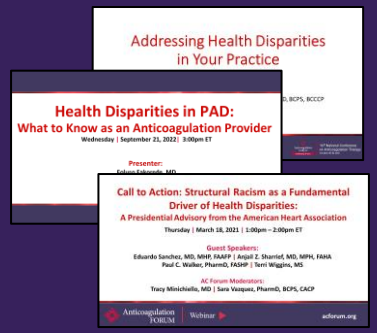
***New Video Resource***

Understanding the Social Determinants of Health




## Resources & Guidance

## Webinars




## Scholarships & Awards

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**Learn More at [https://acforum.org/web/education-idea.php](https://acforum.org/web/education-idea.php)**

# Upcoming Events

# Join us for our Upcoming Webinar!

## Anticoagulants in Older Adults

Thursday | March 28, 2024 | 12:00pm ET

**Alison Burnett**,
PharmD, PhC, CACP

**Arthur Allen**,
PharmD, CACP

**Margaret Fang**,
MD, MPH

**Anna L. Parks**, MD

**Andrea Van Beek**,
DNP, APRN,
AGPCNP-BC, CACP

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https://acforum.org/web/education-webinars.php


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This meeting provides a comprehensive curriculum that covers the essential aspects of anticoagulation, disease state, and drug management.

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# Thank you for Joining us!