



UNIVERSITY OF
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Institute of Life Course
and Medical Sciences



Why an ethnic representation matters: atrial fibrillation/stroke trials

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No competing interests to declare

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What will the next pandemic be? p 432

Fall in early breast cancer mortality p 437

Effectiveness of GRACE risk scores p 439

Spotting infant craniosynostosis p 454

1.5 CPD hours in the education pages

Ethnic inequalities in health

What data can and cannot tell us



Ethnicity and AF risk

Atherosclerosis Risk in Communities (ARIC) cohort study

n=15,080 with no AF at baseline

middle-aged (54 ± 6 y), mean follow-up 20.6 years

3831 (25%) – people of black origin

- Higher BMI (2.6 kg/m² difference)
- More hypertension
- More diabetes

Incident AF rate

(per 1000 person-years)

White: 8.1 (95% CI 7.7-8.5)

Black: 5.8 (95% CI 5.2-6.3)

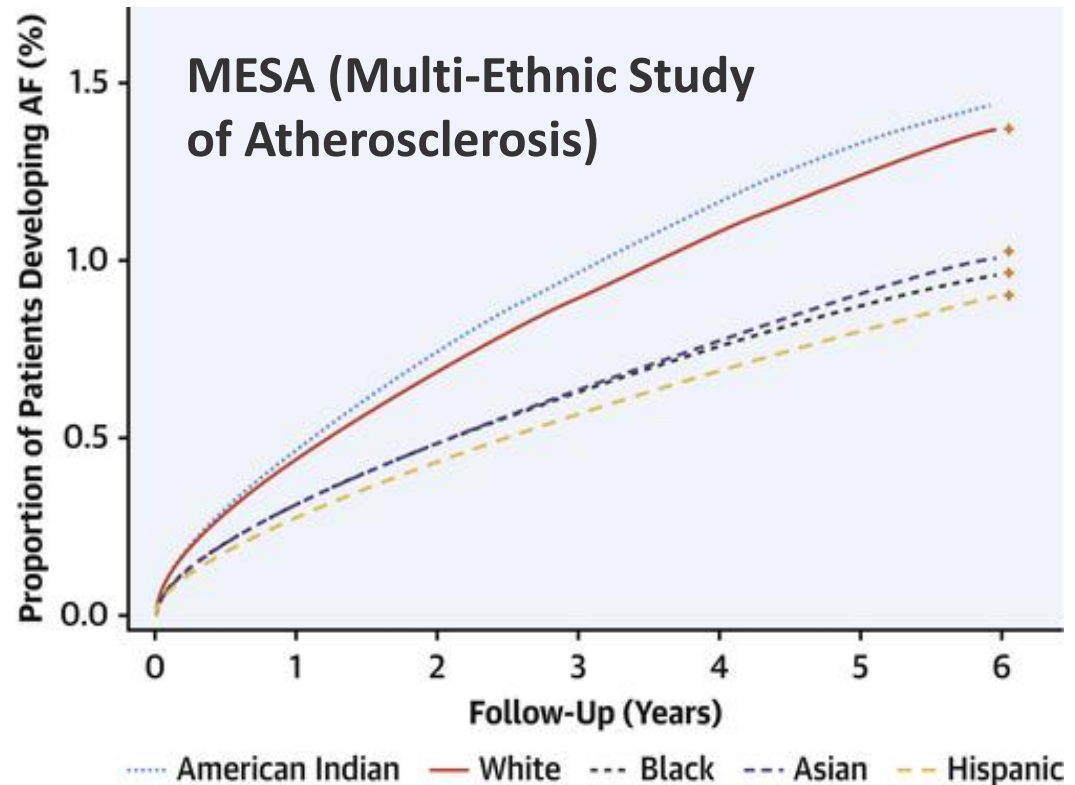
UK CPRD

White: 8.1 (95% CI 8.1-8.2)

Asian: 5.4 (95% CI 4.6-6.3)

Black: 4.6 (95% CI 4.0-5.3)

True prevalence differences vs
detection rates?



Risk Factors and Risk Prediction

- Similar risk factors predictive of incident AF
- Risk factors for AF are more common in non-White populations (**AF paradox**)
- Interactions of risk factors and genetics for AF risk in ethnic groups are poorly understood. **Possible genetic contribution**

Awareness of AF diagnosis

The REGARDS (Reasons for Geographic and Racial Differences) study

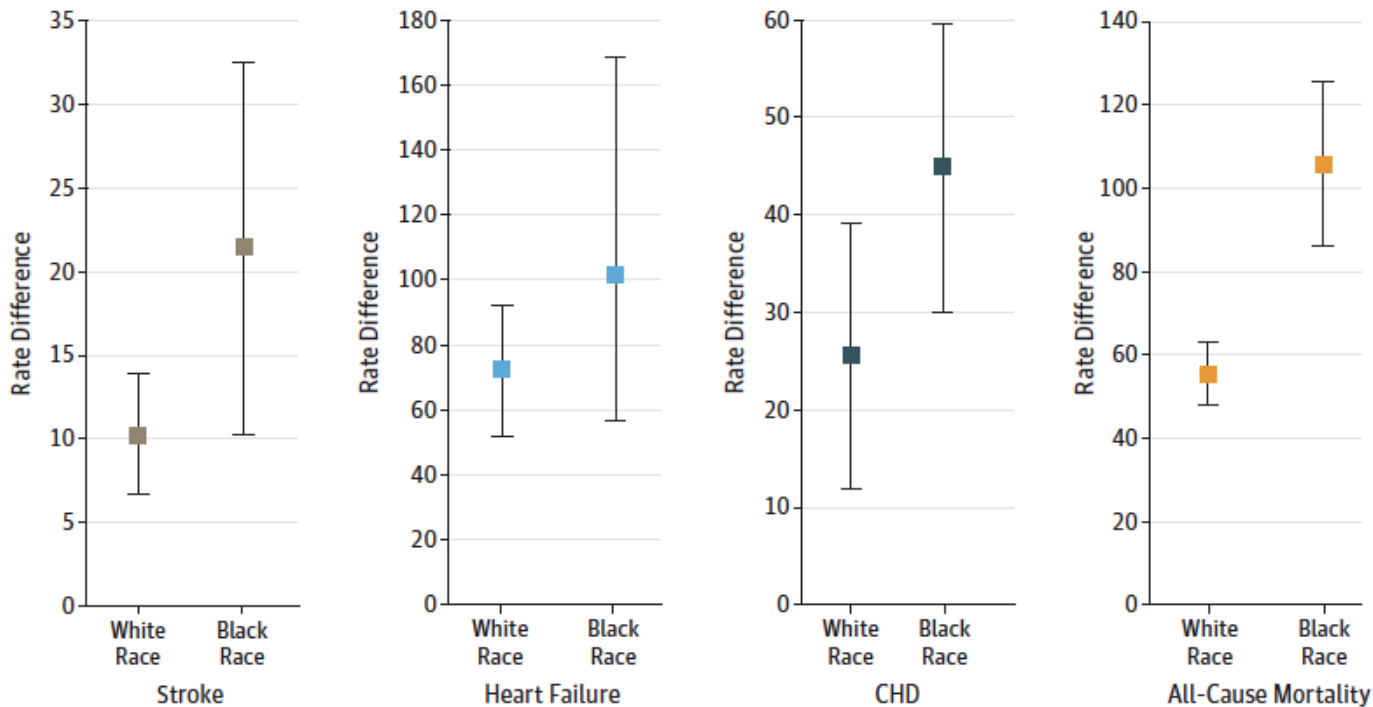
- Black individuals less aware of AF diagnosis: OR 0.32 (95% CI 0.20-0.52)
- Individuals unaware of their AF diagnosis had a 94% higher mortality

Ethnic variations in DOAC use

- The ORBIT-AF II study, outpatient settings
- Black individuals less likely to receive DOACs if OAC was prescribed
- OR 0.73 (95% CI 0.55-0.95) after adjustment for socioeconomic and clinical factors

Ethnicity and Outcomes in AF

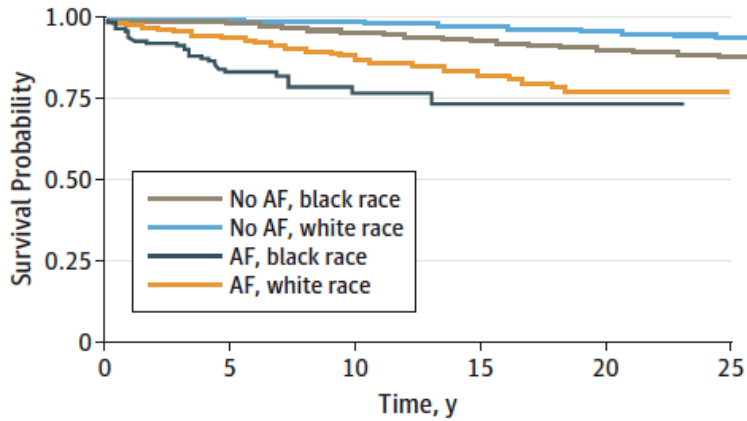
Rate Differences for the Outcomes of Stroke, Heart Failure, CHD, and Mortality Stratified by White and Black Race in the Atherosclerosis Risk in Communities Study



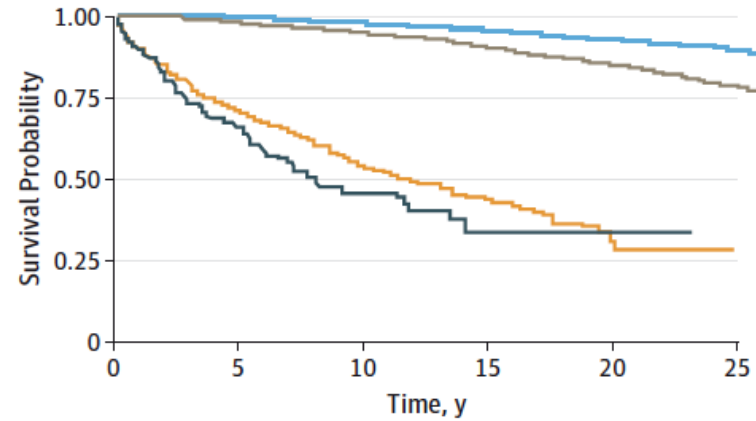
The rate difference for black individuals with atrial fibrillation exceeds that of white individuals across the 4 outcomes. Error bars indicate 95% CIs.

Ethnicity and Outcomes in AF

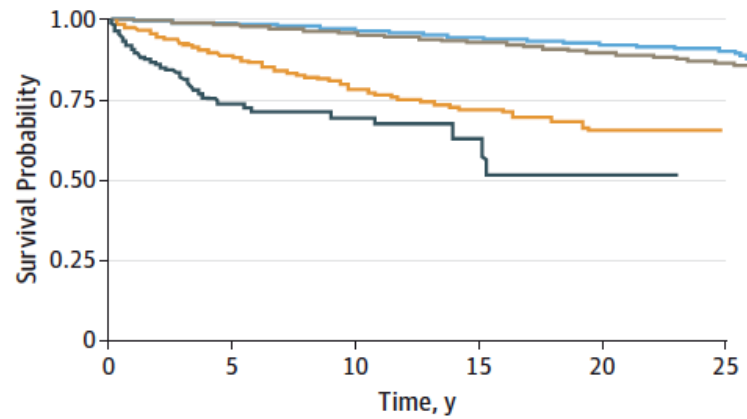
A Stroke by AF status and race



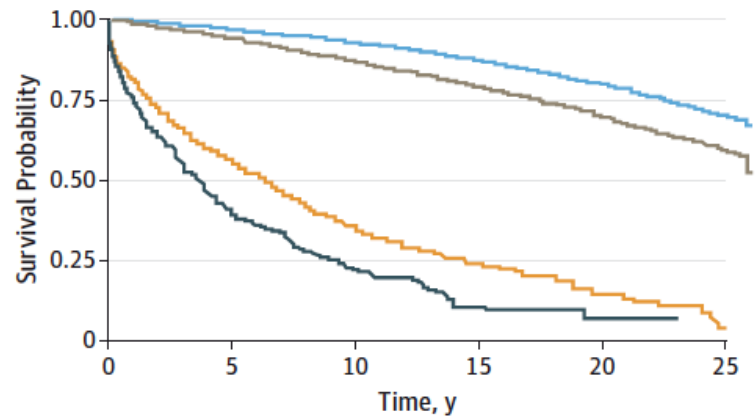
B Heart failure by AF status and race



C CHD by AF status and race



D Mortality by AF status and race



Reporting Ethnicity in AF RCTs

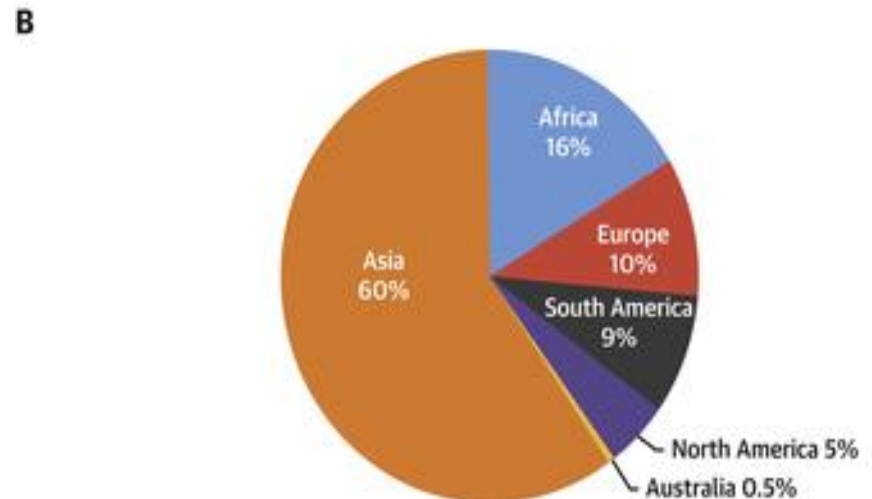
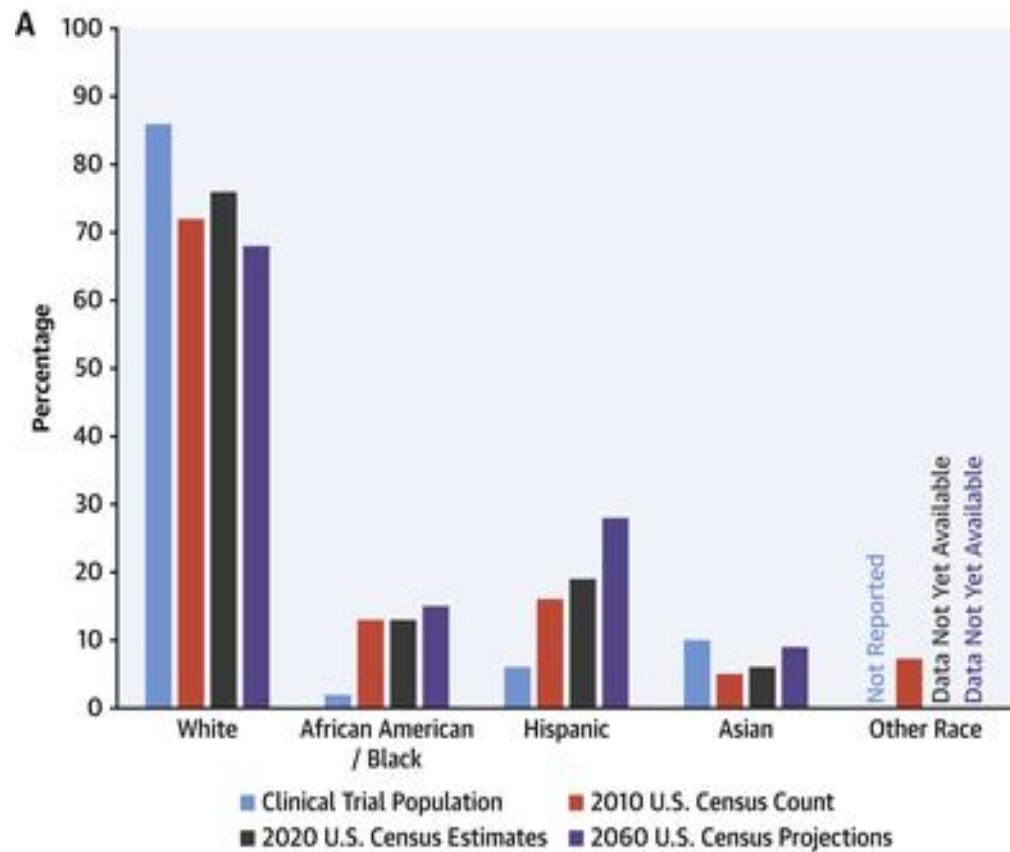
Systematic review of 85 AF RCTs (2011-2021)

- n=2,546,351, enrolment limited to US
- 57% (21.3% participants) reported ethnic data
- Ethnic and racial group representation was low.
 - Black: 5%
 - Asian: 4% (reported in 34 studies)
 - Latin-American: 5% (reported in 33 studies) with no distinction between White and non-White Latin-American people.

The UK is unusual in having made it mandatory to collect ethnicity data in certain official statistics, such as the national census and various government and health and social care datasets.

Only four other European countries have similar requirements.

Ethnic minority populations are underrepresented in major AF RCTs



Ethnicity and Outcomes in DOACs AF RCTs (stroke prevention)

ROCKET-AF (rivaroxaban vs warfarin)

Stroke or SE

		Overall Efficacy	Rivaroxaban	Warfarin	Hazard Ratio	P-value*
			269/7081 (3.8%)	306/7090 (4.32%)	0.88 (0.75, 1.03)	
Race	White		220/5872 (3.75%)	246/5914 (4.16%)	0.9 (0.75, 1.08)	0.424
	Black		5/94 (5.32%)	6/86 (6.98%)	0.78 (0.24, 2.55)	
	Asian		36/897 (4.01%)	50/889 (5.62%)	0.7 (0.46, 1.08)	
	Other		8/218 (3.67%)	4/201 (1.99%)	1.95 (0.59, 6.49)	

Bleeding

		Major and Non-Major Clinically Relevant Bleeding While on Treatment	Rivaroxaban	Warfarin	HR (95% CI)	P-value*
			1475 (20.74)	1449 (20.34)	1.03 (0.96, 1.11)	15
Race	White		1210 (20.49)	1178 (19.79)	1.05 (0.97, 1.13)	0.591
	Black		19 (20.21)	13 (15.29)	1.35 (0.66, 2.75)	
	Asian		210 (23.49)	220 (24.80)	0.93 (0.77, 1.13)	
	Other		36 (16.59)	38 (18.91)	0.92 (0.58, 1.44)	

ENGAGE AF-TIMI 48 (edoxaban vs warfarin)

Subgroup	Patients	Edoxaban		Warfarin	Hazard Ratio with High (95% CI)	Interaction p-value	Hazard Ratio with Low (95% CI)	Interaction p-value
		High	Low					
Race						0.16		0.34
White	17008	2.72	1.58	3.23				
Non-White	4017	2.88	1.76	4.32				

Not all DOAC RCTs reported interaction with ethnicity

No high-quality observational data

Patel et al. N Engl J Med 2011; 365: 883-91
Giugliano et al. N Engl J Med 2013; 369: 2093-104

Summary

- Western White populations have higher AF incidence, but there are gaps in regional data.
- Risk factors for AF are similar among ethnic groups but more prevalent in some non-White groups (AF paradox)
- In people with AF, outcomes are worse in non-White populations. Inequity in DOAC uptake
- Non-White groups are underrepresented in RCTs, and the impact of ethnicity on stroke prevention is unclear.
- Scarce high-quality data exist across the diverse ethnic groups in Europe and Non-Western countries.

Thank you!