

# Adherence to evidence based medications in South Asian and White Caucasian patients with coronary heart disease: Insight from the PRACTICE Registry

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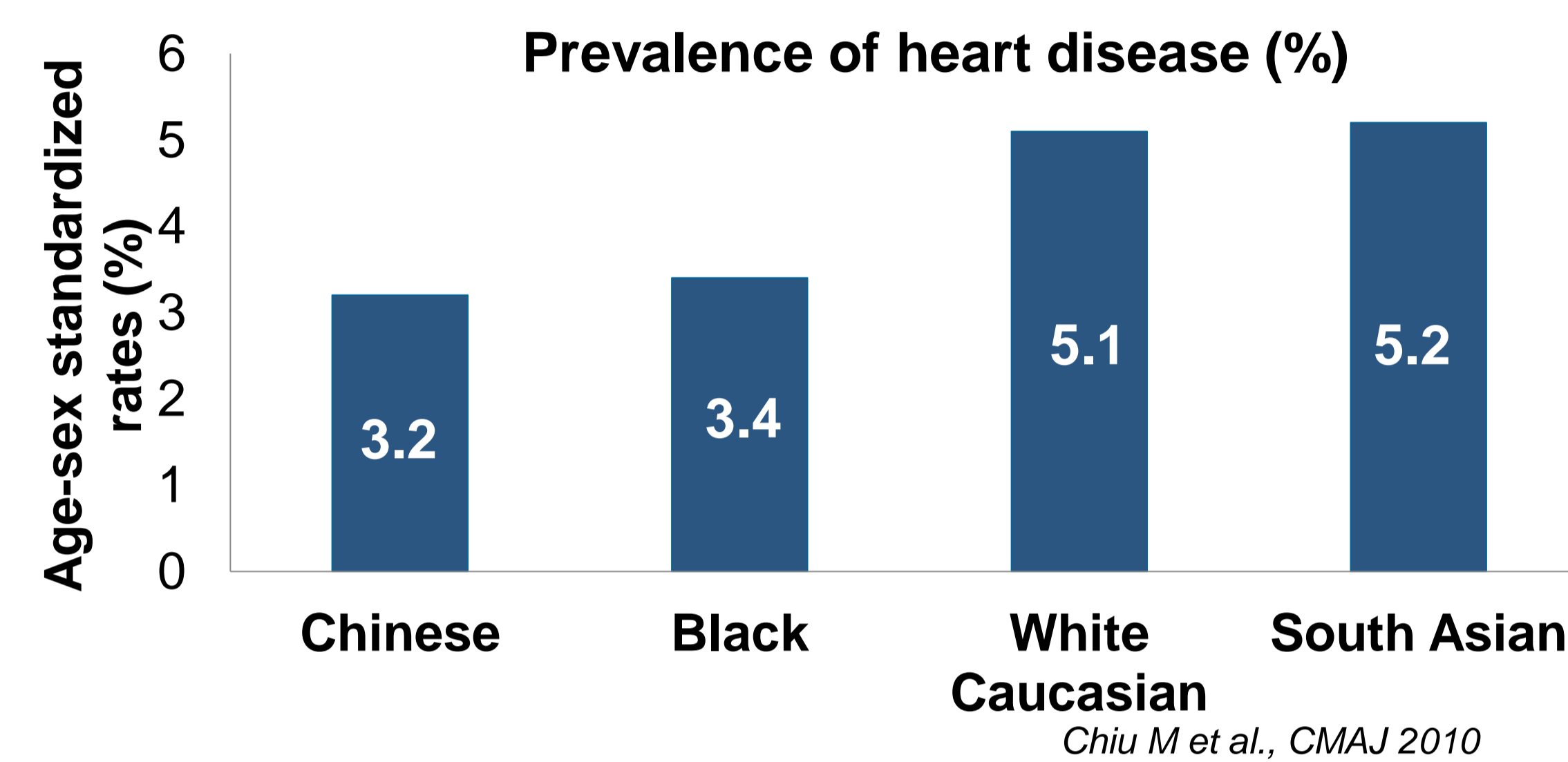
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## BACKGROUND

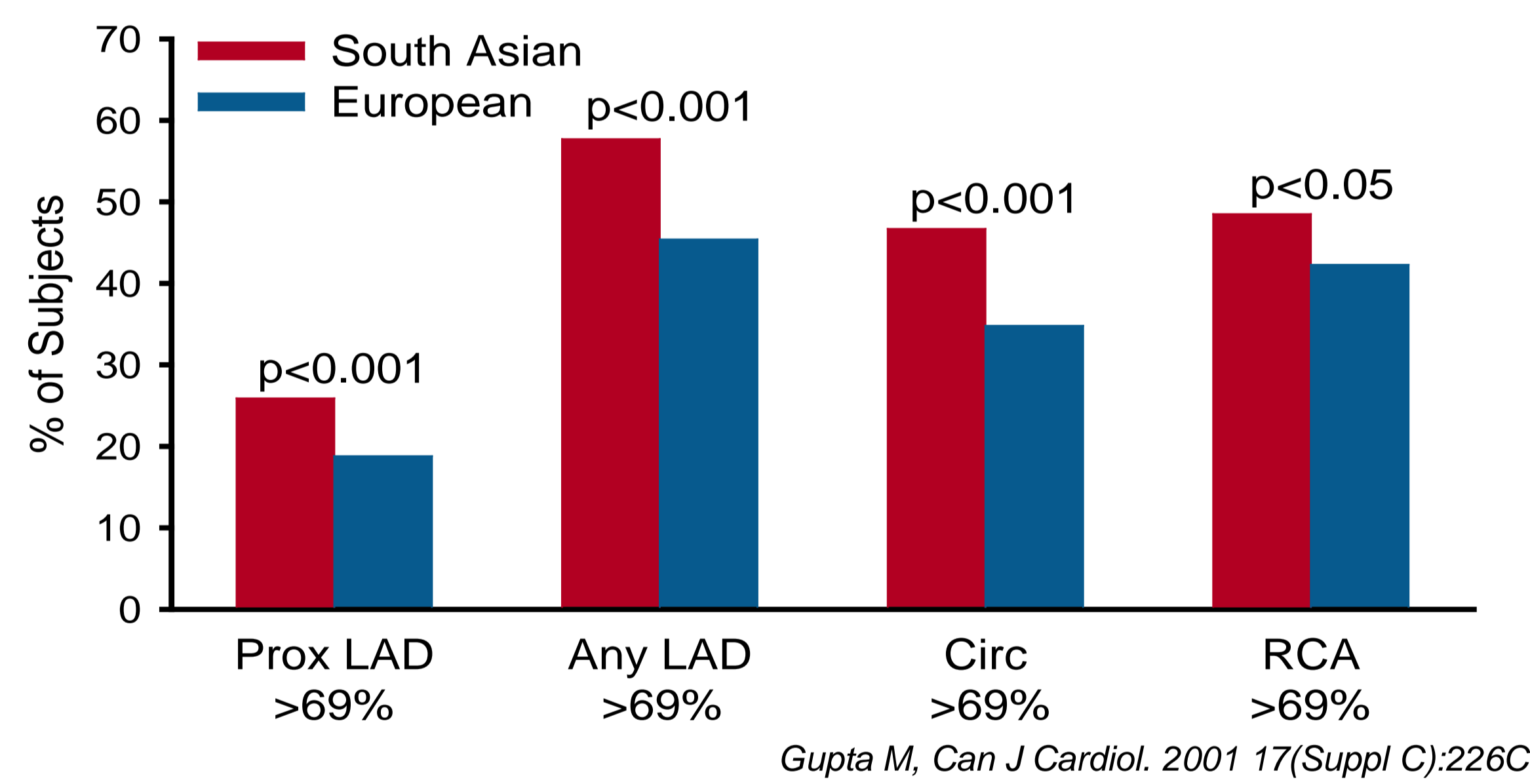
According to the 2006 Canadian Census, South Asians are the country's largest and fastest growing visible minority group

All visible Minorities	South Asian	% Pop' n	Δ '01-'06	Chinese	% Pop' n	Δ '01-'06	
CA	5,068,090	1,262,865	4.0	37.7	1,216,570	3.9	18.2

South Asians have a higher prevalence of coronary heart disease than other groups in Canada



SA have more severe coronary artery disease at angiography



SA ethnicity is an independent predictor of mortality following CABG

Variables	Odds ratio	95% CI
Increasing age	1.1	1.05 - 1.15
Unstable angina	1.9	1.2 - 3.0
Hypertension	2.5	1.0 - 6.8
LVEF < 4.4%	12.2	3.3 - 44.9
SA ethnicity	3.1	1.1 - 6.8

*Brister SJ, J Thorac Cardiovasc Surg. 2007 133(1):150-154*

## OBJECTIVES

- Exploratory pilot study to prospectively evaluate 5-year CV outcomes in South Asian and European Canadians with CAD
- Primary outcome measure: composite of CV death, non-fatal MI, non-fatal stroke, Coronary artery bypass grafting (CABG) or percutaneous coronary intervention (PCI)
- Secondary outcome measure: to assess the 5-year adherence rates to evidence based therapy namely aspirin (ASA), beta-blockers (BB), renin-angiotensin inhibitors (ACEi/ARB) and statins, in 519 consecutive SA and WC

## METHODS

A prospective, single-centre, observational registry of patients with documented CAD – the PRospective Assessment of Cardiovascular risk and Treatment In Canadians of varying Ethnicity (PRACTICE) registry

- Consecutive recruitment of 204 South Asians and 315 European Canadians (519 patients) in 2004

### Inclusion Criteria

- Prior MI, PCI, CABG surgery or
- Angiographic stenosis >50%

- All patients were followed annually for 5 years and were treated according to guideline recommendations with evidence-based therapies

## RESULTS

Table 1. Clinical variables at baseline (BL)

Variables (% (n) or mean ± SD)	South Asian (n=204)	White Caucasian (n=315)	p-value
Age	61.8y ± 10.3	63.1y ± 10.5	p=ns
Male	159 (77.9%)	250 (79.4%)	p<0.00001
Hypertension	115 (56.4%)	157 (49.8%)	p<0.01
Diabetes	110 (53.9%)	92 (29.2%)	p<0.000001
Smoking history			
Current	4 (2%)	40 (12.7%)	p<0.0001
Past	52 (25.5%)	210 (66.7%)	p<0.000001
Family history of CV disease	65 (31.9%)	124 (39.4%)	p=ns
Hyperlipidemia	184 (90.2%)	286 (90.8%)	p=ns

Table 2. Difference in body mass index (BMI) and blood pressure in SA and WC at baseline and year 5

Variables (Mean ± SD)	South Asian (n=204)	White Caucasian (n=315)	p-value
Baseline BMI (Kg/m <sup>2</sup> )	25.7 ± 3.9	28.6 ± 4.7	p<0.000001
Year 5 BMI	26.4 ± 3.7	28.8 ± 5.1	p<0.00001
Baseline SBP*(mm of Hg)	137.2 ± 20.9	137.4 ± 19.9	p=ns
Year 5 SBP	126.8 ± 18.7	126.2 ± 19.2	p=ns
Baseline DBP**(mm of Hg)	80 ± 10.8	81.2 ± 10.6	p=ns
Year 5 DBP	72.9 ± 10.3	73.7 ± 10	p=ns

\* SBP (Systolic blood pressure); \*\* DBP (Diastolic blood pressure)

## RESULTS

Table 3. Lab results at baseline

Variables (% (n) or mean ± SD)	South Asian (n=204)	White Caucasian (n=315)	p-value
TC*(mmol/L)	4.2 ± 1	4.4 ± 1	p<0.05
LDL**(mmol/L)	2.2 ± 0.8	2.4 ± 0.8	p<0.05
HDL*** (mmol/L)	1.2 ± 0.3	1.2 ± 0.3	p=ns
TG**** (mmol/L)	1.9 ± 0.9	1.8 ± 1.1	p=ns
HbA1c	6.5 %	5.7 %	p<0.000001
Creatinine(μmol/L)	97 ± 83.3	93 ± 56.5	p=ns

\* TC (total cholesterol); \*\* LDL (low density lipoprotein); \*\*\* HDL (high density lipoprotein)  
\*\*\*\* TG (triglycerides)

Table 4. Lab results at year 5

Variables (% (n) or mean ± SD)	South Asian (n=204)	White Caucasian (n=315)	p-value
TC(mmol/L)	4 ± 0.8	4 ± 0.9	p=ns
LDL(mmol/L)	2 ± 0.6	2.1 ± 0.7	p=ns
HDL(mmol/L)	1.2 ± 0.3	1.2 ± 0.3	p=ns
TG(mmol/L)	1.7 ± 1	1.5 ± 0.7	p<0.01
HbA1c	6.8 %	6 %	p<0.000001
Creatinine(μmol/L)	96 ± 26.9	98.1 ± 29.7	p=ns

Figure 1. Medication use by SA and WC patients at baseline

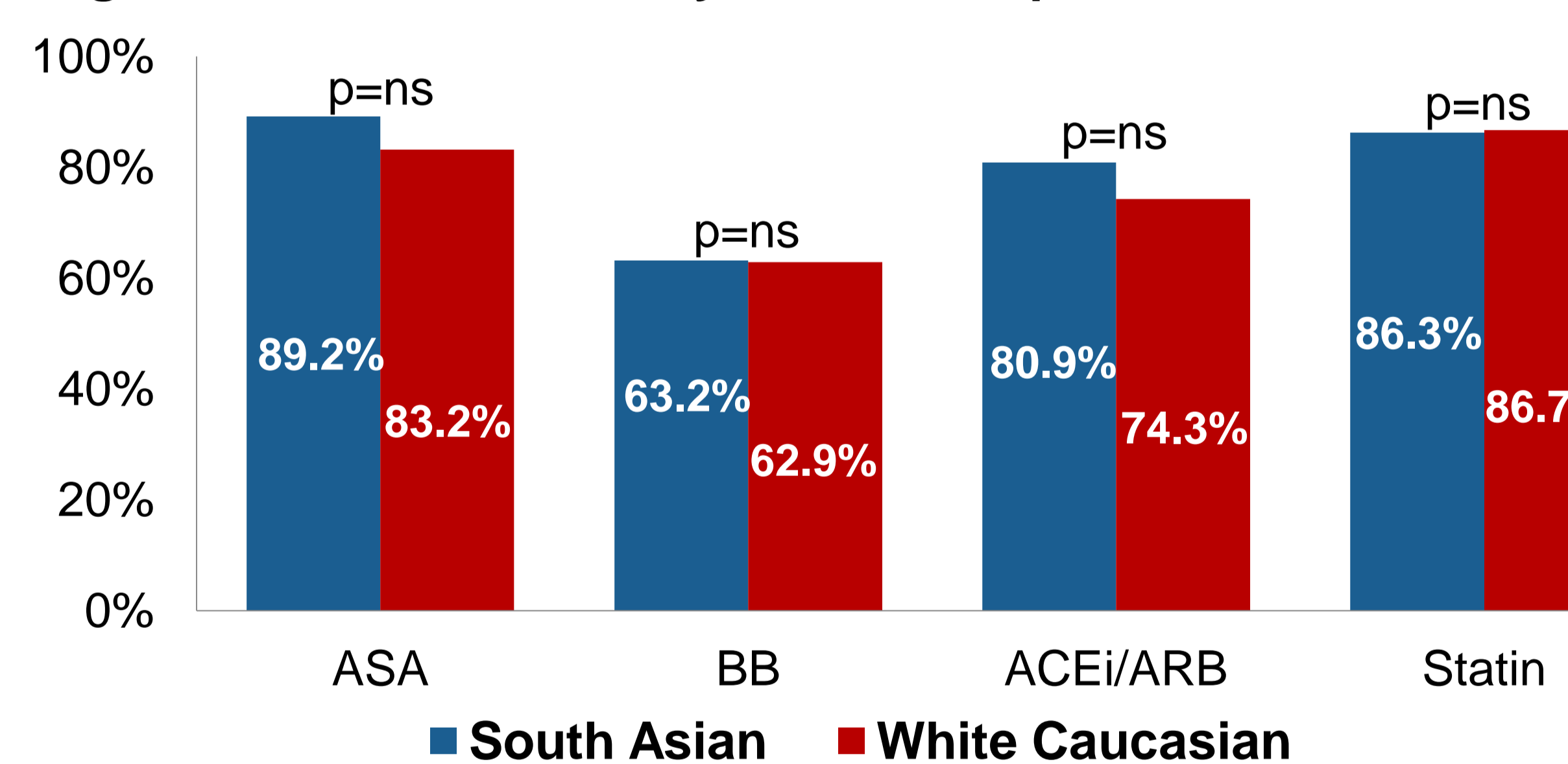
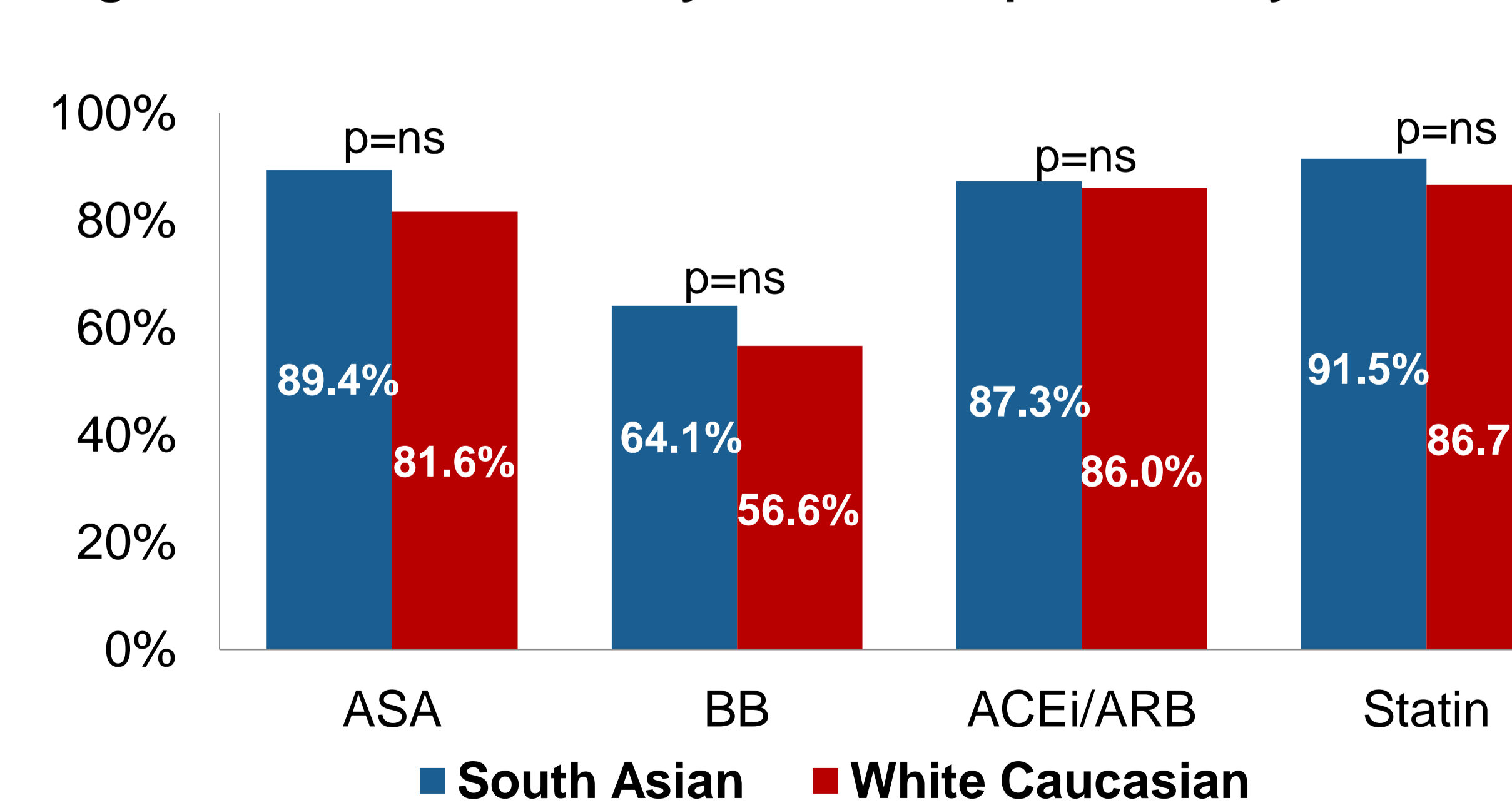


Figure 2. Medication use by SA and WC patients at year 5



\* TC (total cholesterol); \*\* LDL (low density lipoprotein); \*\*\* HDL (high density lipoprotein)  
\*\*\*\* TG (triglycerides)

## RESULTS

Figure 3. Use of ALL 4 medications (ASA, BB, ACEi/ARB and statin) by SA and WC patients at BL and Year 5

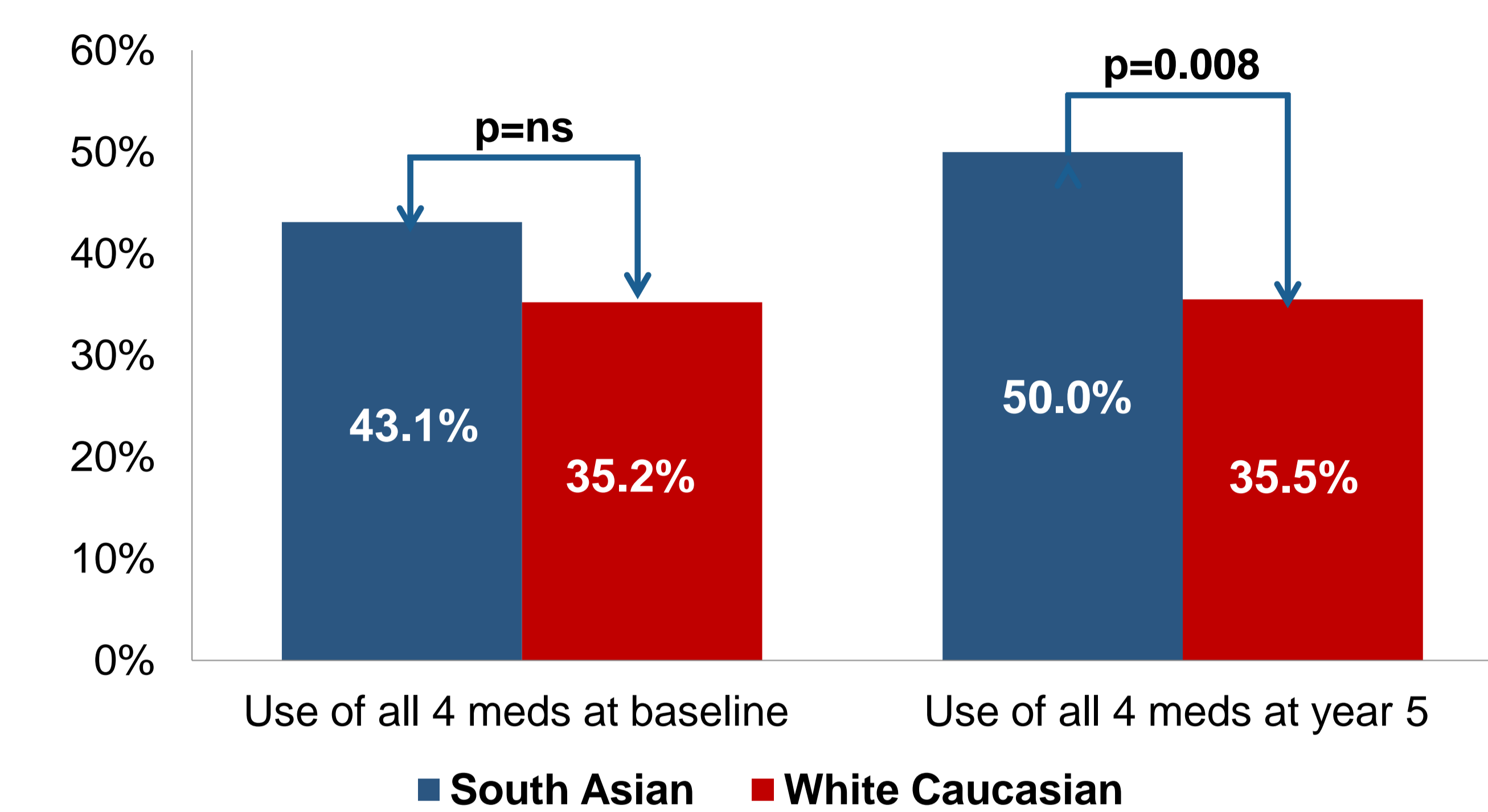
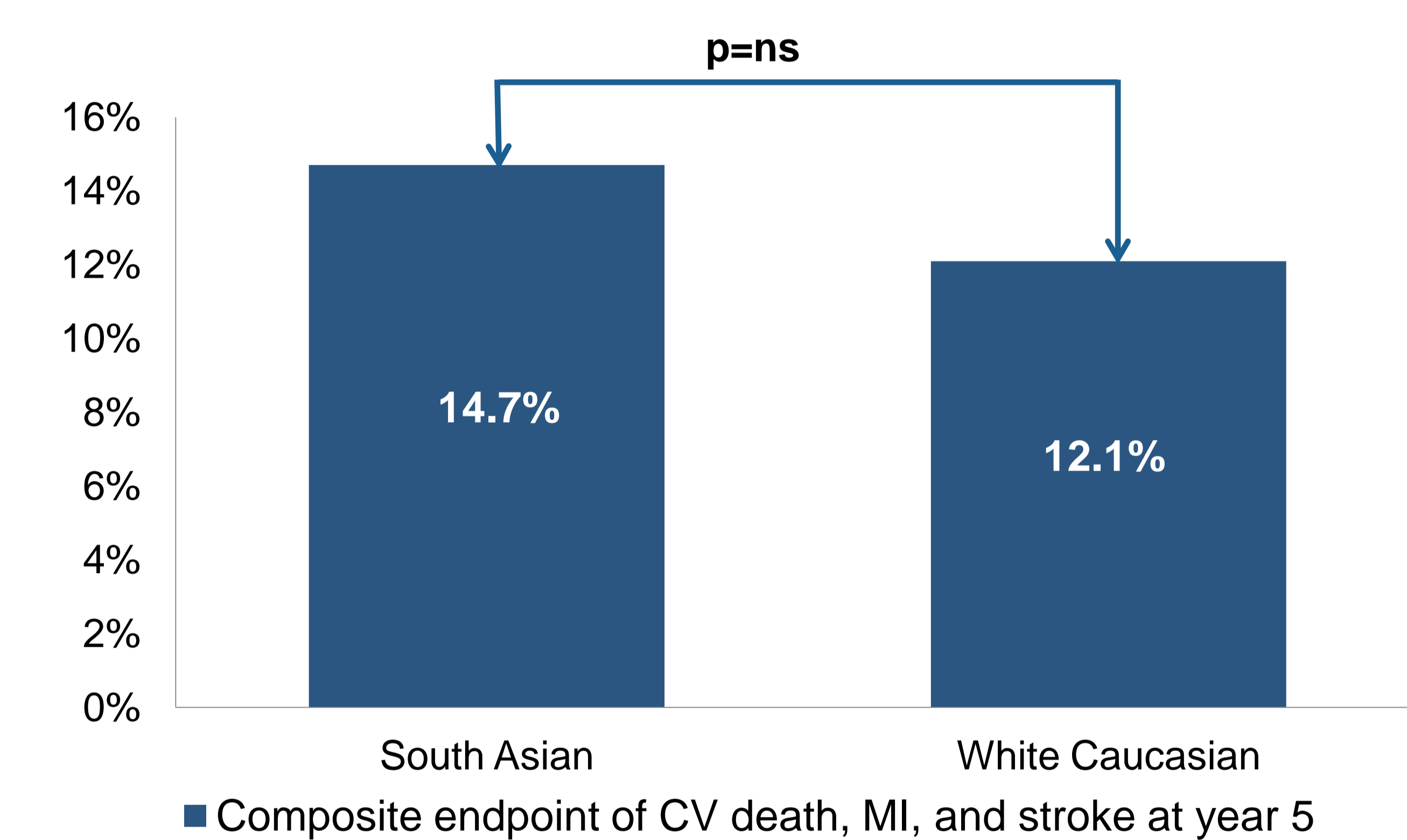


Figure 4. Composite endpoint of CV death, MI, and stroke in SA vs WC patients at Year 5



## SUMMARY AND CLINICAL IMPLICATIONS

- The use of all 4 evidence-based drug therapies at baseline in CAD patients in PRACTICE was sub-optimal, regardless of ethnicity

- SA are more adherent to all 4 evidence-based drug therapies than are WC at 5 years, with similar LDL and BP levels. Despite this, major CV events were non-significantly higher in SA (14.7 vs 12.1%, p=0.43), suggesting that other mechanisms may underlie any excess risk noted in the SA population with CAD

## CONFLICTS OF INTEREST

The authors report no conflicts of interest to disclose