

BACKGROUND AND OBJECTIVE

- Cardiovascular disease remains the leading cause of death in Portugal and across the world. Atherosclerosis (AS) is the most common pathophysiologic process underlying CVD.
- AS clinical manifestations include coronary artery disease (CAD), cerebrovascular disease (CVD) and peripheral artery disease (PAD).
- This study aims to determine the clinical and demographic characteristics of adult patients with AS in a Portuguese primary care comprehensive administrative database.

METHODS

- Population-based study with real world data covering a population of 3.6 million patients attending primary care services in a large region in Portugal (Lisbon and Tagus Valley) (ARS LVT).
- Data were collected from an administrative database that includes costs as well as resource use, clinical and demographic information. Clinical information includes diagnosis (coded according to the International Classification of Primary Care 2nd Edition [ICPC2]), test results and medications (classified according to the World Health Organization Anatomical Therapeutic Chemical [ATC] classification) prescribed.
- We analyzed patients' characteristics, comorbidities, and resource use in 2016 related to medical tests and cardiovascular (CV) diagnostic procedures, visits and medication for all eligible patients. Medication was prescribed in ambulatory care settings (primary care and hospital ambulatory). We considered hypoglycemic agents, CV system medication (except class C05 [vasoprotectives]) and antithrombotic agents. Other resource use related only to primary care.
- Eligible patients included adults with at least one GP visit in 2016. Patients were selected for inclusion by fulfilling at least one of the following criteria. Together, these criteria were used as a proxy of AS.

Inclusion criteria

Symptomatic AS

- Diagnosis for clinical manifestations
 - Ischaemic heart disease with angina (ICPC2 K74)
 - Acute myocardial infarction (ICPC2 K75)
 - Ischaemic heart disease without angina (ICPC2 K76)
 - Transient cerebral ischaemia (ICPC2 K89)
 - Stroke/cerebrovascular accident (ICPC2 K90)
 - Peripheral vascular disease (ICPC2 K92)

Medication

- Dispensing of
 - Antiplatelet drugs (ATC B01AC)
 - Naftidrofuryl (ATC C04AX21)
 - Pentoxifylline (ATC C04AD03)

Risk factors

- Presence of at least three cardiovascular risk factors
 - Male ≥ 65 years or female ≥ 70 years
 - Smoking
 - Systolic blood pressure ≥ 150 mm Hg
 - Microalbuminuria ≥ 30 $\mu\text{g}/\text{mL}$
 - Dispensing of hypoglycemic agents (ATC class A10)
 - Dispensing of antidiabetic drugs (ATC class A10)
- Risk factors were adapted from the REACH study.

RESULTS

93,847 patients

182,678 patients

213,411 patients

318,692 unique patients

One patient may fulfil more than 1 criteria

All AS patients (n = 318,692)

Figure 1. AS patients characteristics (ARS LVT vs. REACH study).

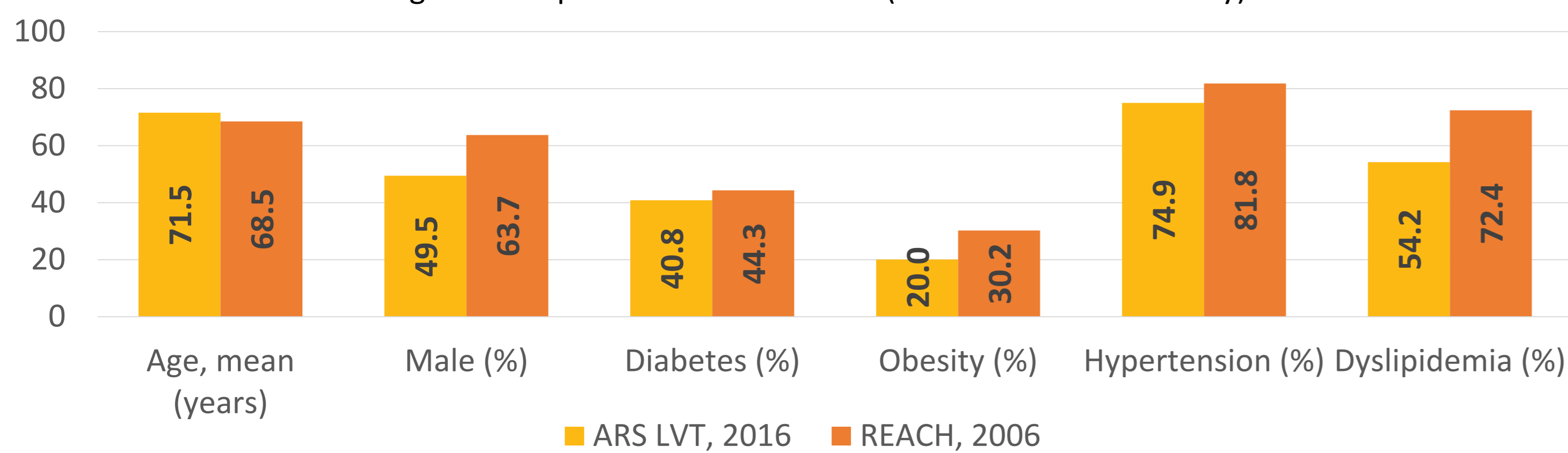


Figure 2. Prevalence of AS clinical manifestations (ARS LVT).

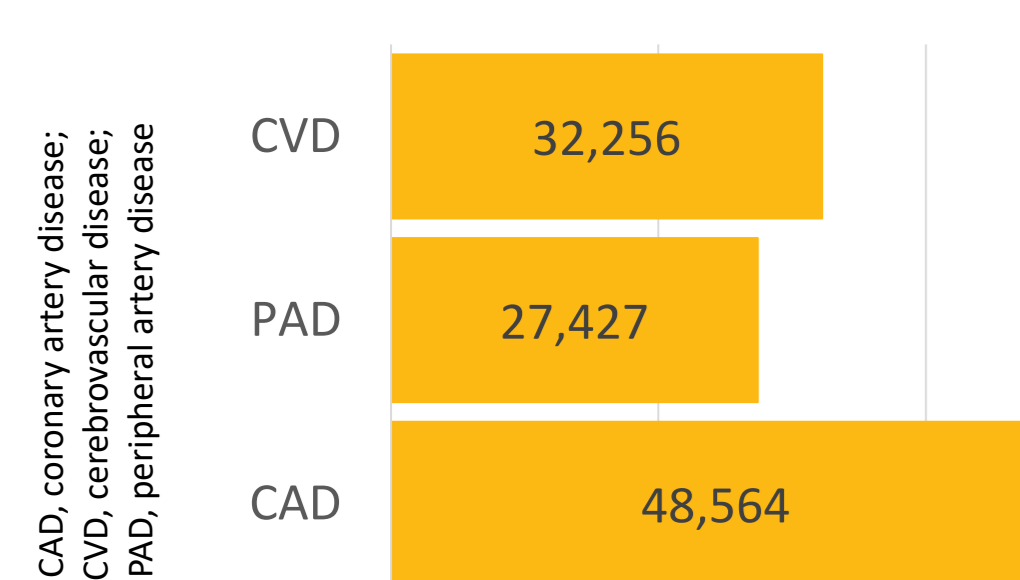


Table 1. TOP 3 most frequently dispensed medication (ARS LVT).

Medication	Patients (%)
Lipid modifying agents (ATC C 10)	76.3%
Agents acting on the RA system (ATC C09)	74.1%
Antithrombotic agents (ATC B01)	58.0%

RA, renin-angiotensin

99% of patients had at least one medication dispensed in 2016

73% of patients had at least one CV medical test or diagnostic procedure done in 2016



4.1 \pm 2.9 face-to-face GP visits

1.8 \pm 2.5 other primary care contacts

(prescription renewal, telephone calls)
Average \pm SD during 2016

Table 2. CV medical test or diagnostic procedure per patient (ARS LVT).

Test or procedure	Average number per patient
Total cholesterol	0.75 \pm 0.71
EKG	0.30 \pm 0.50
Doppler ultrasound of lower ext arteries	0.03 \pm 0.23
Exercise stress test	0.03 \pm 0.18
Carotid ultrasound	0.02 \pm 0.15

Symptomatic AS (clinical manifestations) (n = 93,847)

Figure 3. Symptomatic AS patients characteristics (ARS LVT vs. REACH study vs. COMPASS study).

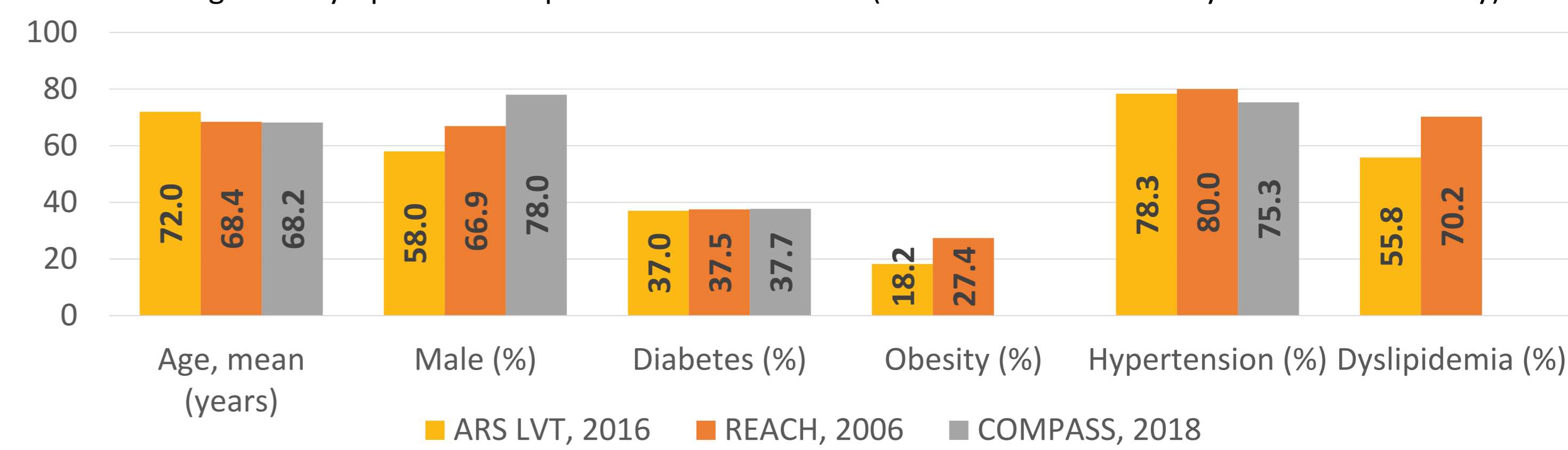


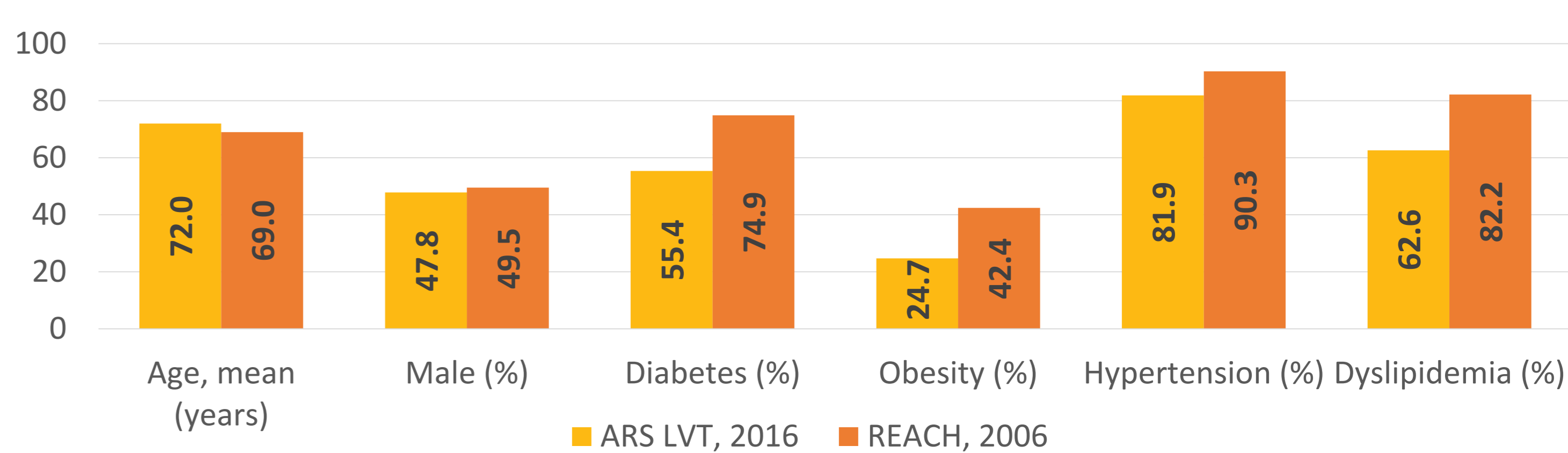
Table 3. Symptomatic AS patients characteristics (ARS LVT vs. COMPASS study).

	ARS LVT, 2016	COMPASS, 2018	Number of observations (ARS LVT, 2016)
SBP, mean (mmHg)	142	136	75,095
DBP, mean (mmHg)	75	78	75,087
Total cholesterol, mean (mg/dL)	172	166	1,799

DBP, diastolic blood pressure; SBP, systolic blood pressure.

Risk factors only (no clinical manifestations) (n = 155,312)

Figure 4. Risk factors only patients characteristics (ARS LVT vs. REACH study vs. COMPASS study).



CONCLUSIONS

- AS, either clinical or subclinical, is common in primary care users in Portugal.
- CAD is the most common manifestation.
- Hypertension is the most prevalent comorbidity.

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REFERENCES