Barriers to Diagnosis & Care in Women

CRYPTOGENIC STROKE PUBLIC HEALTH CONFERENCE:
DEFINING A COORDINATED APPROACH TO PATIENT DIAGNOSIS & MANAGEMENT

Annabelle S. Volgman, MD, FACC, FAHA

McMullan-Eybel Chair - Professor of Medicine

Director, Rush Heart Center for Women

Rush University Medical Center

Chicago, IL

AHA Cardiovascular Disease & Stroke in Women & Special Populations Committee

Lecture Outline

- What are the statistics?

- Barriers to diagnosis and care

- Women and Atrial Fibrillation

Cardiovascular disease (CVD) and other major causes of death in females: total, <85 years of age, and ≥85 years of age.

Most people are more afraid of having a stroke than a heart attack!

Dariush Mozaffarian et al. Circulation. 2015;131:e29-e322

American Heart Association.
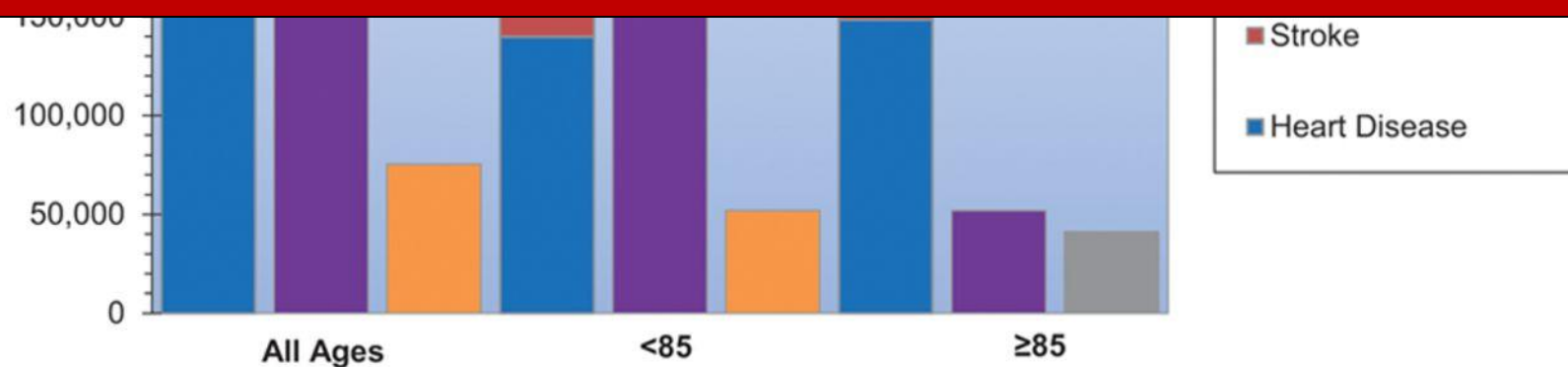
Table 1 – AHA/ASA Statistics Update 2015: gender-specific stroke statistics.

Gender group	Mortality, 2011: all ages		Prevalence, 2012: age ≥ 20 y	New and recurrent attacks, all ages	
Females	76,597	(59.4%)[a]	3,600,000 (2.7%)	425,000	(53.5%)[a]
Males	52,335	(40.6%)[a]	3,000,000 (2.6%)	370,000	(46.5%)[a]

- Each year stroke kills twice as many women as breast cancer.
- However, this fact is widely unknown among the general public. Women are also less knowledgeable about the risk factors and don't perceive themselves at risk for stroke.

*Incidence counts cover about 99% of the U.S. population; death counts cover about 100% of the U.S. population. Use caution when comparing incidence and death counts.

†Source: U.S. Cancer Statistics Working Group. United States Cancer Statistics: 1999–2012 Incidence and Mortality Web-based Report. Atlanta (GA): Department of Health and Human Services, Centers for Disease Control and Prevention, and National Cancer Institute; 2015

Table 2 – Gender differences in stroke risk factors.

Risk factors specific to women	Risk factors that are stronger or more prevalent in women
Changes in hormonal status	Atrial fibrillation
Gestational diabetes	Depression
Oral contraceptive use	Diabetes mellitus
Postmenopausal hormone use	Hypertension
Preeclampsia	Migraine with aura
Pregnancy	Psychosocial stress

US age-standardized death rates* from cardiovascular diseases, 2000 to 2012.
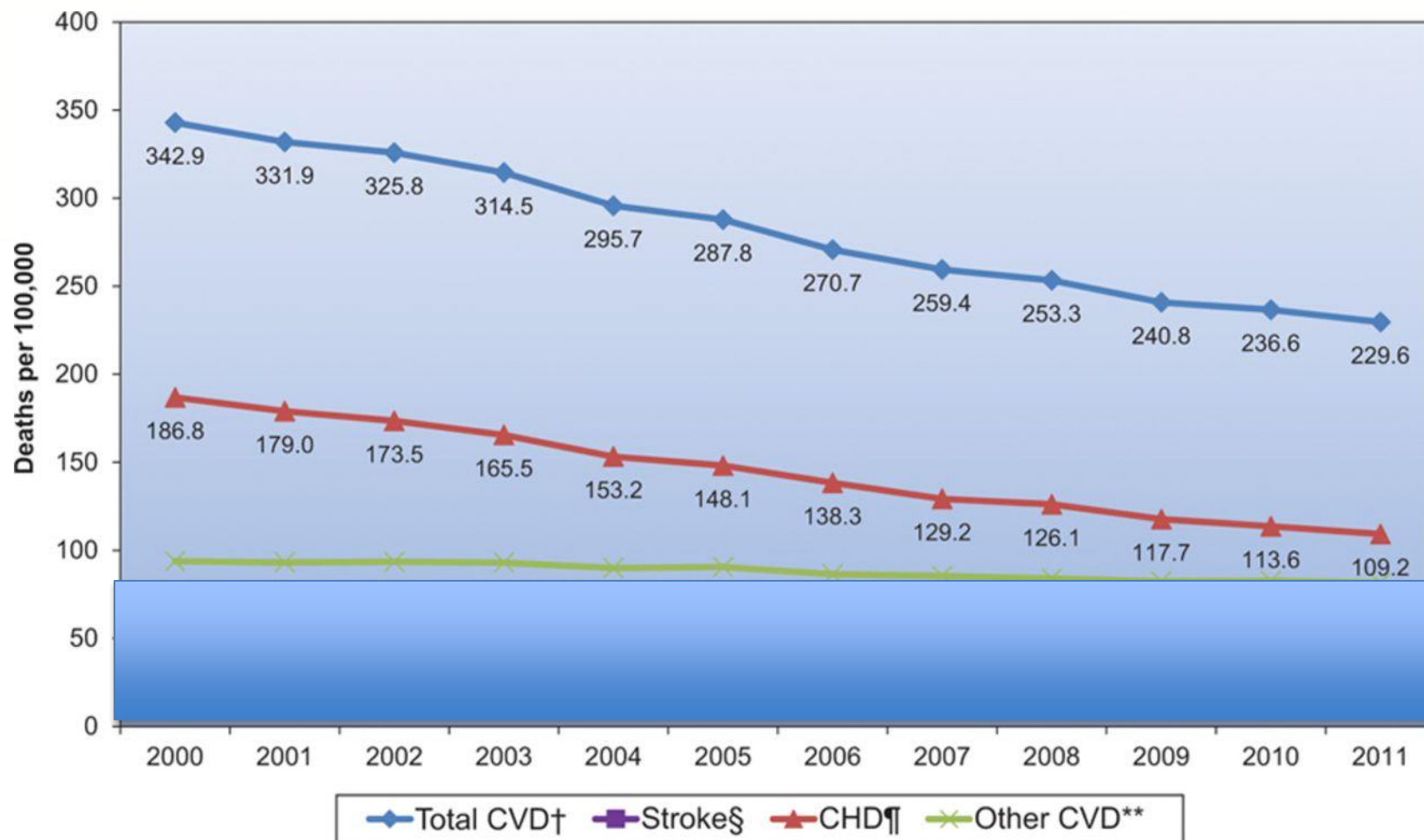
Dariush Mozaffarian et al. Circulation. 2015;131:e29-e322

CVD disease mortality trends for males and females

HRT

HRT STOPPED

Awareness campaign for Women and heart disease started

Statins

550
530
510
490
470
450
430
410
390
370
350

Deaths in Thousands

1979   1980   1985   1990   1995   2000   2005   2011
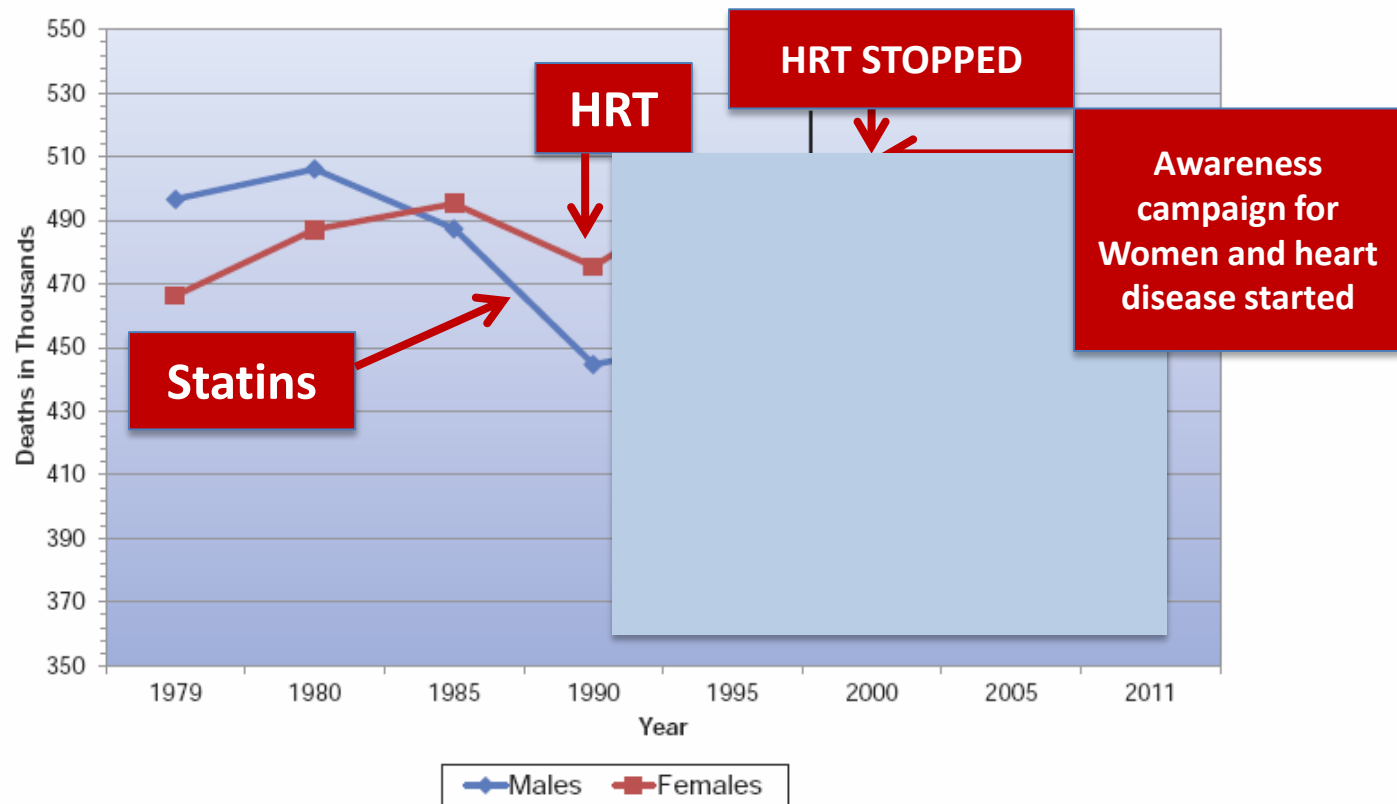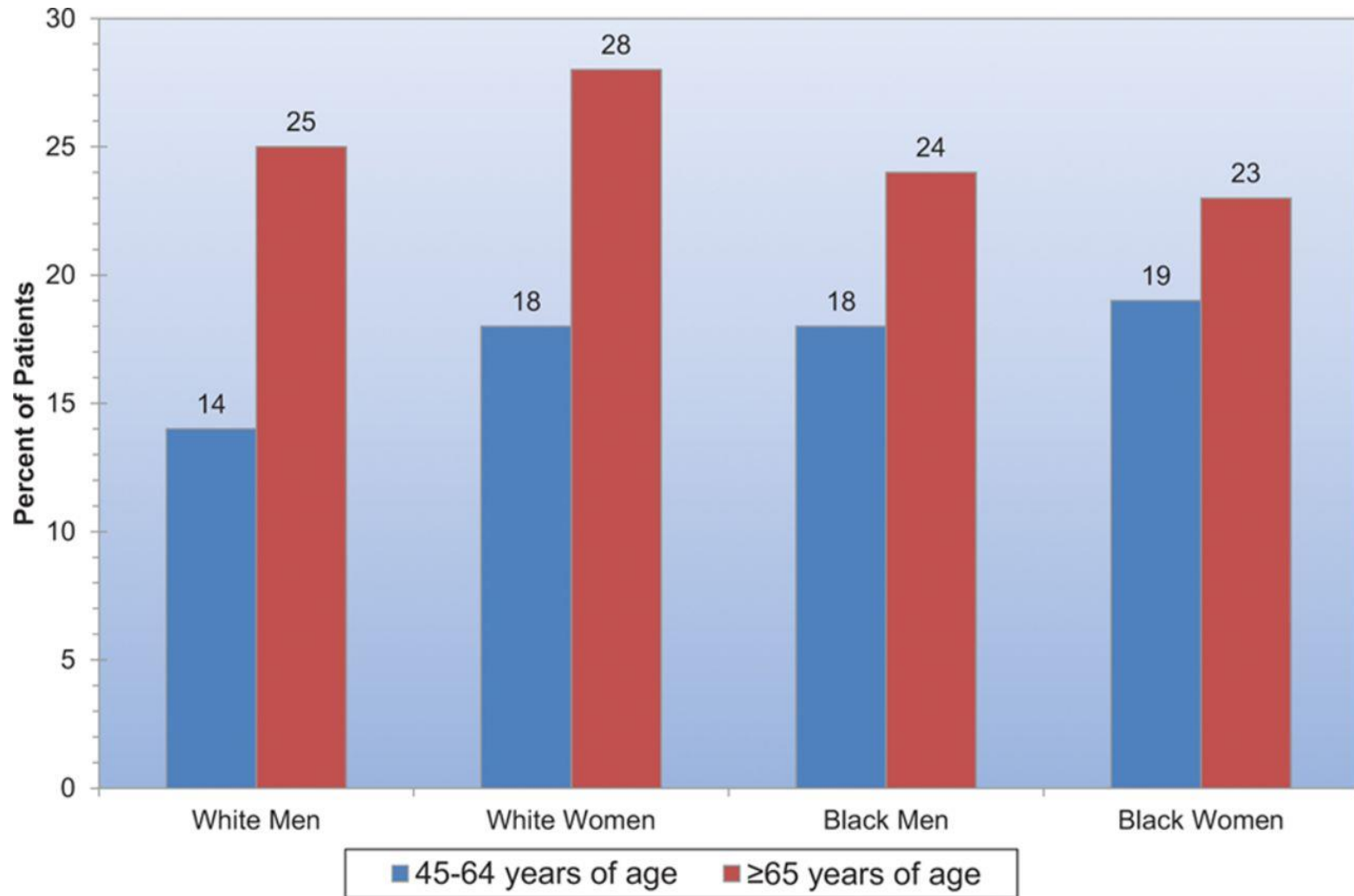
Year

◆ Males   ■ Females

Chart 13-17. Cardiovascular disease (CVD) mortality trends for males and females (United States: 1979–2011). CVD excludes congenital cardiovascular defects (*International Classification of Diseases, 10th Revision* [ICD-10] codes I00–I99). The overall comparability for cardiovascular disease between the *International Classification of Diseases, 9th Revision* (1979–1998) and *ICD-10* (1999–2011) is 0.9962. No comparability ratios were applied. Source: National Center for Health Statistics and National Heart, Lung, and Blood Institute.

Proportion of patients dead 1 year after first stroke.

American
Heart
Association.

Proportion of patients with recurrent stroke in 5 years after first stroke.

American Heart Association®
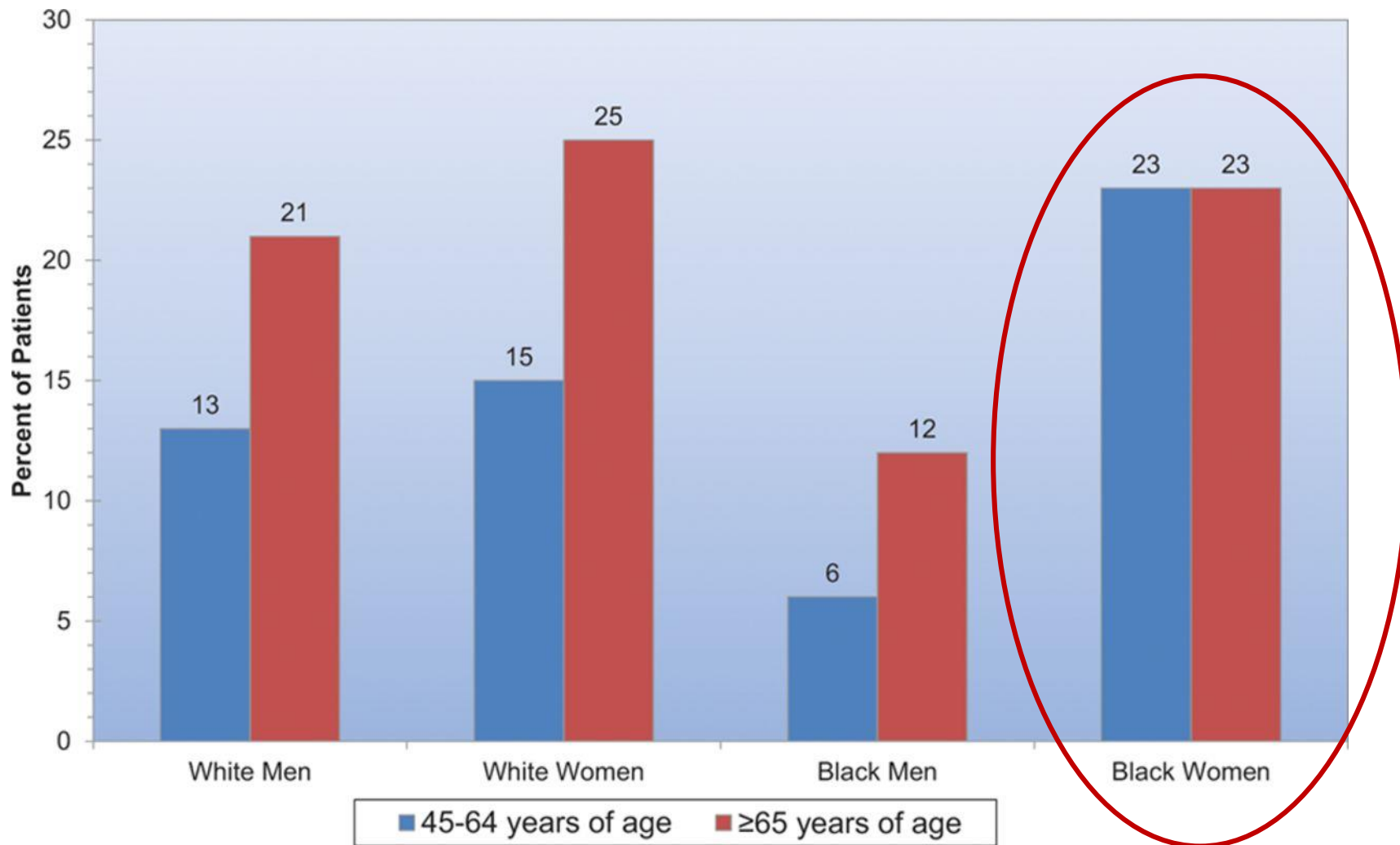
Prevalence of stroke by age and sex (National Health and Nutrition Examination Survey: 2009–2012).

Dariush Mozaffarian et al. Circulation. 2015;131:e29-e322
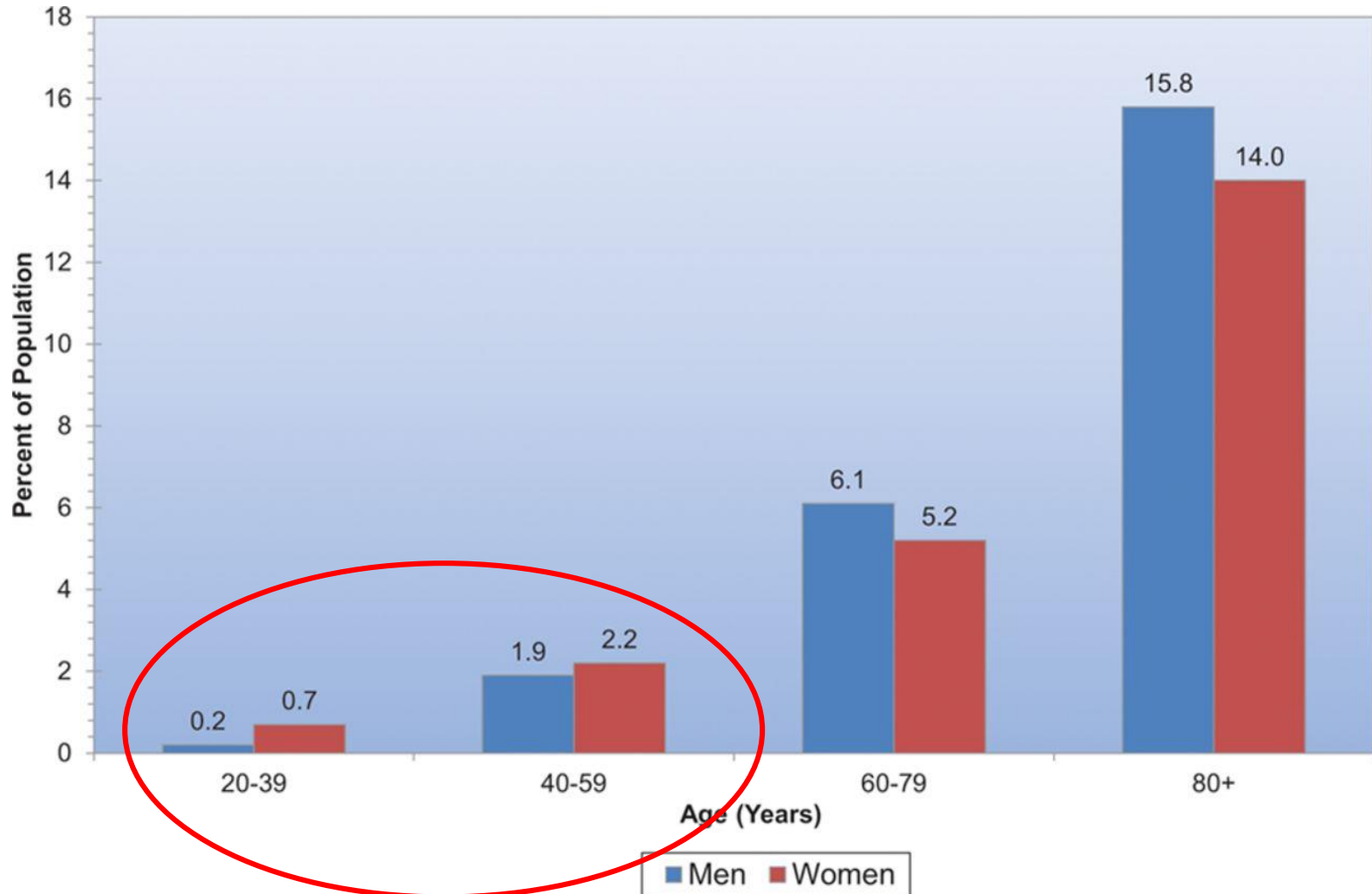
American Heart Association.

Strokes in Middle Age

Men 35-54

1988-94 - 1.0%

1994-04 - 1.0%

2005-06 - 1.1%

Women 35-54

1988-94 – 0.5%

1994-04 – 2.0%

2005-06 – 2.9%

National Health and Nutrition Study
American Stroke Association Conference Feb 20 2008
International Stroke Conference Feb 2010

Lecture Outline

- What are the statistics?

- Barriers to diagnosis and care

- Women and Atrial Fibrillation

Warning Signs of Stroke

RUSH UNIVERSITY

- A feeling of numbness or weakness in your face, arm, or leg
- Vision problems in one or both eyes
- Dizziness or loss of balance; difficulty walking
- Confusion

Women may report symptoms that are different from common symptoms, creating a problem, as they are often not recognized as a stroke symptom, and treatment is often delayed.

- Feeling weak all over
- Chest pain
- Shortness of breath
- Rapid heart beat

Lecture Outline

- What are the statistics?

- Barriers to diagnosis and care

- Women and Atrial Fibrillation

CHADS$_2$

Risk Factor	Score
CHF	1
HTN	1
Age ≥ 75 years	1
Diabetes	1
Stroke/TIA/TE	2
MAX	**6**

CHA$_2$DS$_2$-VASc

Risk Factor	Score
CHF	1
HTN	1
Age ≥ 75 years	2
DM	1
Stroke/TIA/TE	2
Prior MI, PAD or aortic plaque	1
Age 65-74 years	1
Sex: Female	1
MAX	**9**

ORIGINAL ARTICLE

Prediction of stroke or TIA in patients without atrial fibrillation using CHADS$_2$ and CHA$_2$DS$_2$-VASc scores

L Brent Mitchell,[1] Danielle A Southern,[2] Diane Galbraith,[1] William A Ghali,[3] Merril Knudtson,[1] Stephen B Wilton,[1] for the APPROACH investigators

ABSTRACT

Objectives To determine the accuracy of CHADS$_2$ and CHA$_2$DS$_2$-VASc tools for predicting ischaemic stroke or transient ischaemic attack (TIA) and death in patients without a history of atrial fibrillation or flutter (AF).

Methods The study included 20 970 patients without known AF enrolled in the Alberta Provincial Project for Outcomes Assessment in Coronary Heart disease (APPROACH) prospective registry who were discharged after an acute coronary syndrome (ACS) between 2005 and 2011. The outcome measures were incident ischaemic stroke, TIA or death from any cause.

Results Over a median follow-up of 4.1 years, 453 patients (2.2%) had a stroke (n=297) or TIA (n=156) and 1903 (9.0%) died. The incidence of stroke or TIA increased with increases in each risk score (p<0.001), with an absolute annual incidence ≥1% with CHADS$_2$ ≥3 or CHA$_2$DS$_2$-VASc ≥4. Both CHADS$_2$ and CHA$_2$DS$_2$-VASc scores had acceptable discrimination performance (C-statistic=0.68 and 0.71, respectively). The mortality rate was also greater in patients with higher CHADS$_2$ and CHA$_2$DS$_2$-VASc scores (p<0.0001).

Conclusions In patients with ACS but no AF, the CHADS$_2$ and CHA$_2$DS$_2$-VASc scores predict ischaemic stroke/TIA events with similar accuracy to that observed in historical populations with non-valvular AF, but with lower absolute event rates. Further study of the utility of the CHADS$_2$ and CHA$_2$DS$_2$-VASc scores for the assessment of thromboembolic risk and selection of antithrombotic therapy in patients without AF is warranted.

oral anticoagulants.[5] Although the predictive values of CHADS$_2$ and CHA$_2$DS$_2$-VASc scores for ischaemic stroke were modest (c-statistics 0.66 and 0.67, respectively), there was a clear increase in annual risk with increasing scores using either predictive tool. Recently, CHADS$_2$ and CHA$_2$DS$_2$-VASc clinical tools have been reported to have predictive capacity for outcomes in patients without known AF, including the risk of death after stroke,[6] the risk of new onset AF,[7] the risks of stroke or death after coronary artery bypass grafting,[8] [9] the risk of stroke in unselected patients,[10] the risk of stroke in patients with stable coronary artery disease[11] and the risk of stroke after an acute coronary syndrome (ACS).[12]

The purposes of the present study were to further evaluate the utility of the CHADS$_2$ and CHA$_2$DS$_2$-VASc clinical tools for the prediction of stroke, TIA, death and their composites in a very large, well-characterised population of patients discharged after an ACS. This analysis also permits an indirect assessment of the risk of stroke independently conferred by AF in this patient population.

METHODS

Study population and data sources

In the province of Alberta, Canada, all cardiac care is coordinated by a single organisation (Alberta Health Services), divided into five regional zones. Using its administrative Discharge Abstract Database, we identified all patients discharged alive from acute care hospitals in the Southern and Calgary zones (2011

Conclusions of Meta-Analysis

RUSH UNIVERSITY

- Women with atrial fibrillation have a residual CVA/SE when treated with warfarin compared to men

- Clinical disadvantage of women disappeared when women were treated with NOACs

- Equivalent efficacy of stroke prevention in men and women

- Less incidence of major bleeding in women with NOACs

Pancholy SB[1], Sharma PS[2], Pancholy DS[2], Patel TM[3], Callans DJ[4], Marchlinski FE[4]. Meta-analysis of gender differences in residual stroke risk and major bleeding in patients with nonvalvular atrial fibrillation treated with oral anticoagulants. Am J Cardiol. 2014 Feb 1;113(3):485-90. doi: 10.1016/j. Epub 2013 Nov 11.

Measures to decrease strokes in women

- Ongoing improvements:
  - Go Red for Women campaign – FAST acronym
  - WomenHeart – Afib awareness campaign
  - WiseWoman by CDC – screening women for risk factors
  - Pharmaceutical companies – novel anticoagulants may improve strokes in women with atrial fibrillation

- Future needs:
  - Improve identification of risks of strokes in different age groups such as OCP use, obesity, hypertension and lipid profiles in young women
  - Improve screening and detection of atrial fibrillation in women, especially those over 75 years of age