

Impact of CHA₂DS₂-VASc Risk Factors on Anticoagulant Prescription in Patients with Atrial Fibrillation: Insights from the NCDR® PINNACLE Registry

Lauren E Thompson MD, Thomas M Maddox MD MSc; Lanyu Lei MSc, Steven M Bradley MD MPH, Gary K Grunwald PhD, Pamela N Peterson MD MSPH, Frederick A Masoudi MD MSPH, Yuichi J Shimada MD MPH, Alexander Turchin MD, Yang Song MS, Gheorghe Doros PhD, Melinda B Davis MD, Stacie L Daugherty MD MSPH



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Financial Disclosures

- None



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Background

- Risk treatment paradox for oral anticoagulant (OAC) use in women with atrial fibrillation (AF)
- Female gender is an independent risk factor in guideline recommended $\text{CHA}_2\text{DS}_2\text{-VASc}$



Study Aims

- Compare association between each CHA₂DS₂-VASc component with OAC use among patients with AF and a guideline-based indication for anticoagulation



Data Source

- National Cardiovascular Data Registry's (NCDR): PINNACLE Registry
- Voluntary nationwide registry
- >95 out-patient cardiology practices
- Data quality assurance measures



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Study Population

- Eligible
 - All patients with non-valvular AF from 2010-14
- Inclusions
 - $\text{CHA}_2\text{DS}_2\text{-VASc} \geq 2$
- Exclusions
 - Missing gender
 - Reversible causes of AF
 - Other indications for OAC
 - Contraindication to OAC



Primary Predictor

- CHA₂DS₂-VASc score:

C - Congestive Heart failure, ever

H - Hypertension

A₂ - Age \geq 75years (2 points)

D - Diabetes Mellitus

S₂ - Prior stroke/TIA or thromboembolism (2 points)

V - Vascular Disease (PAD, CAD, hx of MI)

A - Age 65-74 years

S - Female gender



Primary outcome

- OAC prescription
 - Warfarin or Direct Oral Anti-coagulation (DOAC)
- Prescription within one year of first AF diagnosis



Statistical Analysis

- Multivariable regression models
- Adjusted for patient characteristics, bleeding risk, and providers characteristics at that site
 - Included individual CHA₂DS₂-VASc components
- Accounted for clustering by provider within practices
 - Generalized Estimating Equations



Study Population

738,864 Patients with NVAf
and CHA₂DS₂-VASc ≥ 2

Exclusions 32,556 (4.4%)

1,798 (0.2%) Missing gender

1,318 (0.2%) Reversible AF

4,717 (0.6%) Other indication for OAC

28,704 (3.4%) Contraindication for OAC

706,308 Patients



Baseline Demographics

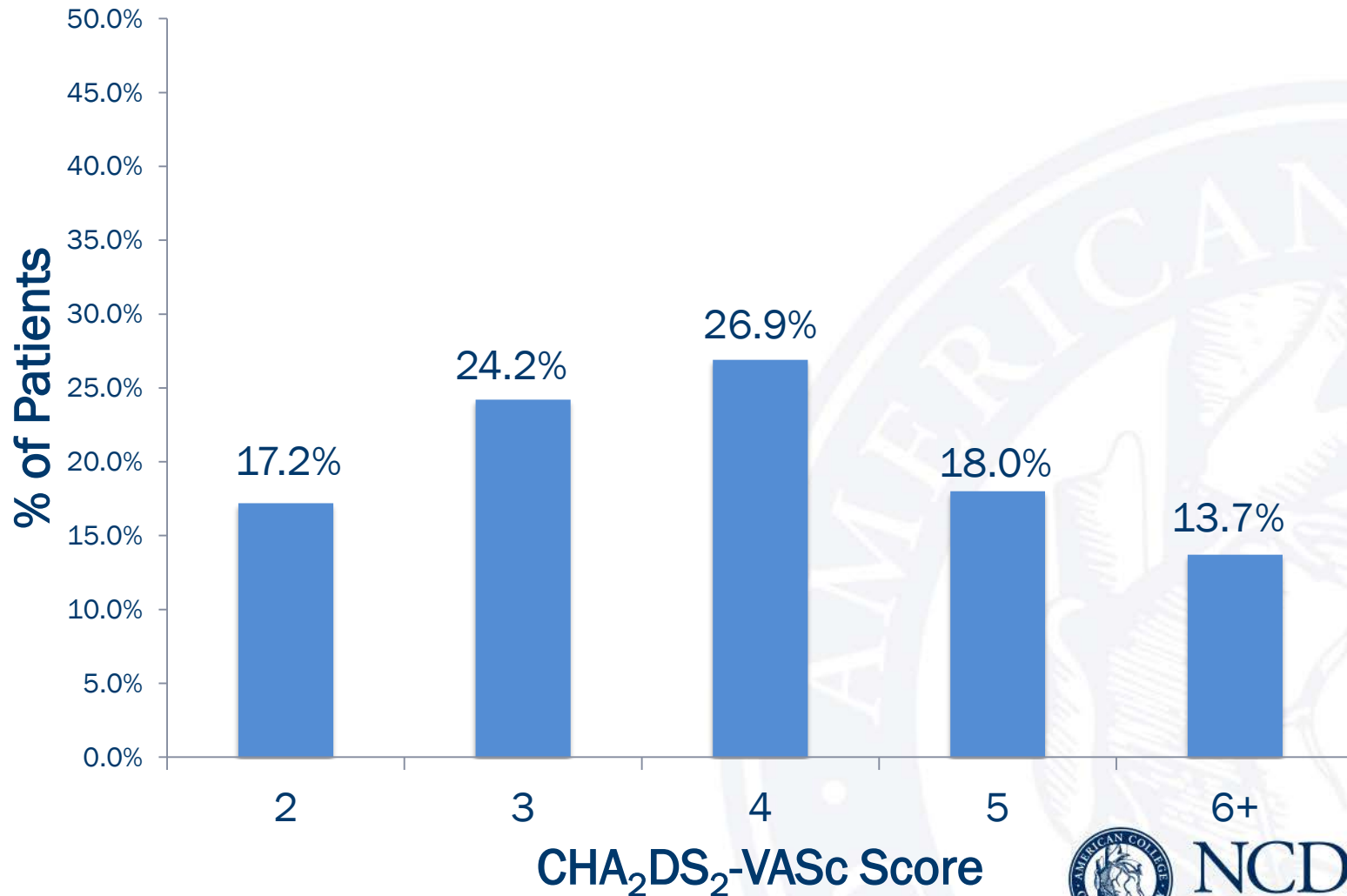
Characteristic	Patients (n=706,308)
Age	74.4 \pm 10.7
White	65%
Private Insurance	47%
mHASBLED	2.2 \pm 0.8
CHA ₂ DS ₂ -VASc	3.9 \pm 1.4
CHF	26%
HTN	80%
Age \geq 65	84%
DM	24%
CAD	51%
PAD	9%
Female	48%
Cerebrovascular Event	4%



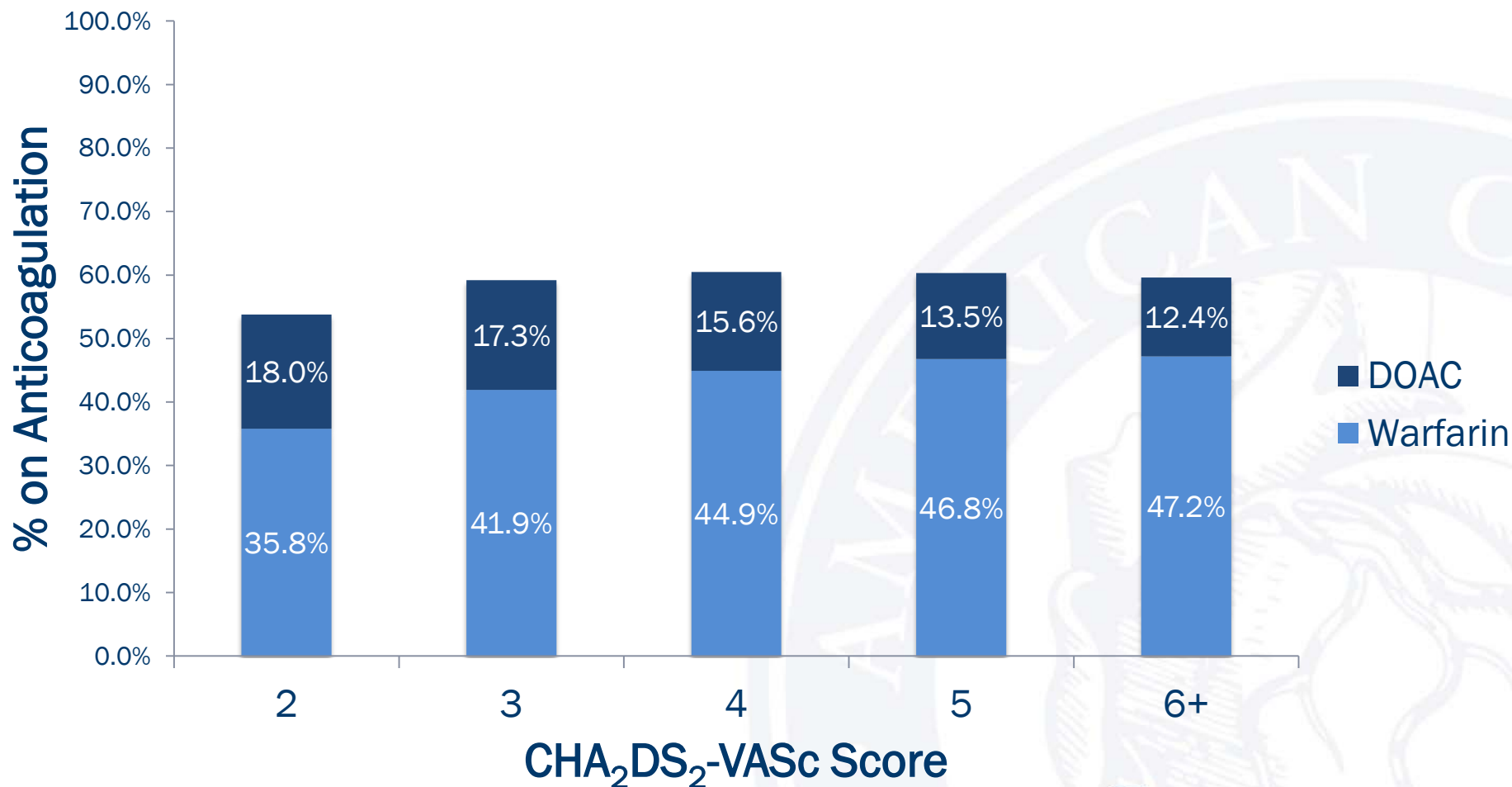
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Patient distribution by CHA₂DS₂-VASc

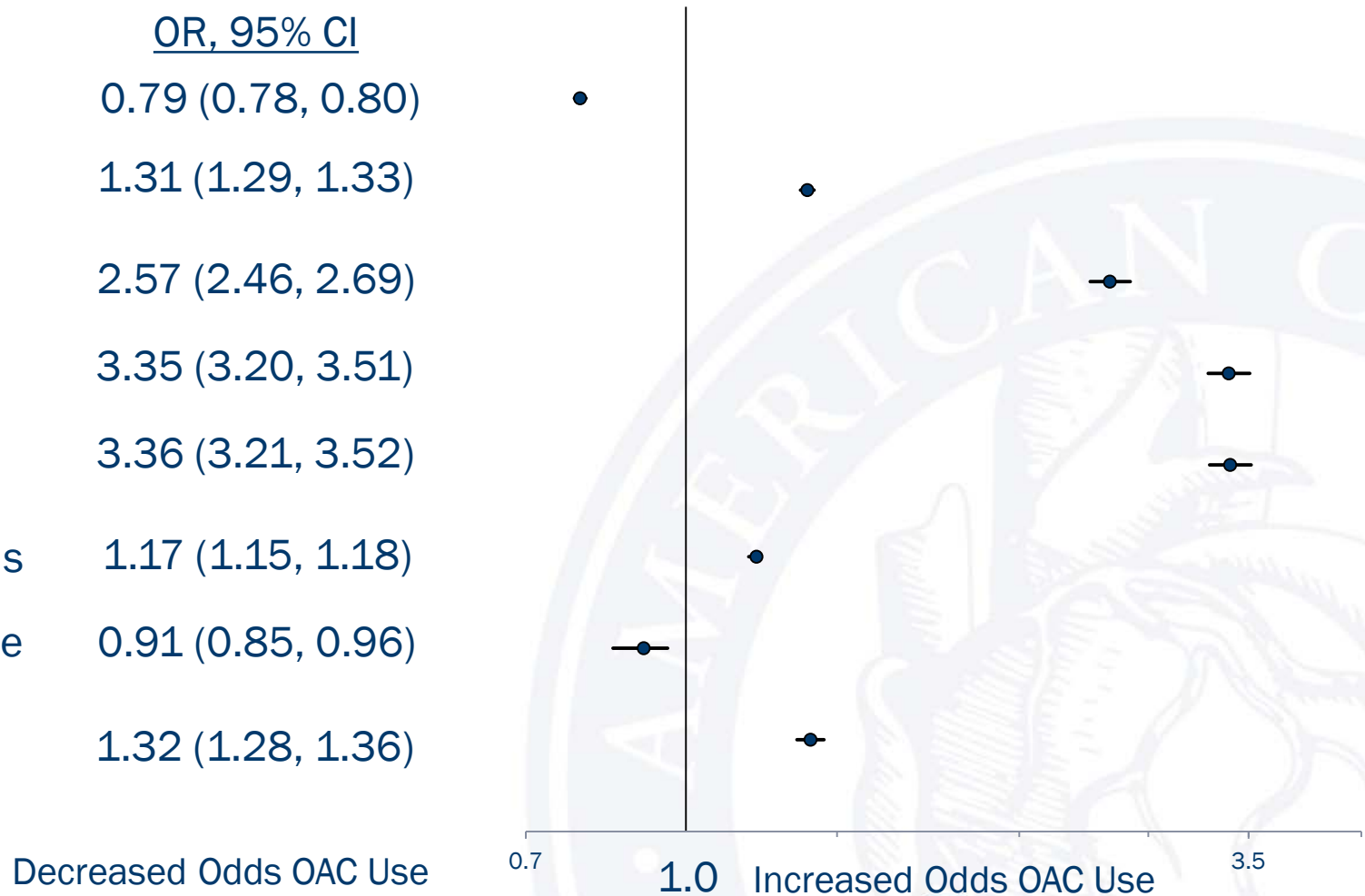


Overall use of OAC is low



Female gender and vascular disease associated with decreased odds of OAC use

<u>CHA₂DS₂-VASc Component</u>	<u>OR, 95% CI</u>
Female Gender	0.79 (0.78, 0.80)
CHF	1.31 (1.29, 1.33)
Hypertension	2.57 (2.46, 2.69)
Age 65-74	3.35 (3.20, 3.51)
Age ≥ 75	3.36 (3.21, 3.52)
Diabetes Mellitus	1.17 (1.15, 1.18)
Vascular Disease	0.91 (0.85, 0.96)
Stroke/TIA	1.32 (1.28, 1.36)



All P < 0.001, except Vascular Disease p = 0.001



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Conclusions

- Female gender and vascular disease are associated with decreased OAC use
- HTN and age categories were associated with increased OAC use



Limitations

- Later incorporation of CHA₂DS₂-VASc into US clinical guidelines
- Incomplete capture of OAC use
- Unable to assess reasons for OAC use or non-use



Implications

- Potential under recognition of female gender and vascular disease as a risk factor for thromboembolic events
- Risk factors for thromboembolic events may be weighed differently in decisions to use OAC



Thank You

- Questions?



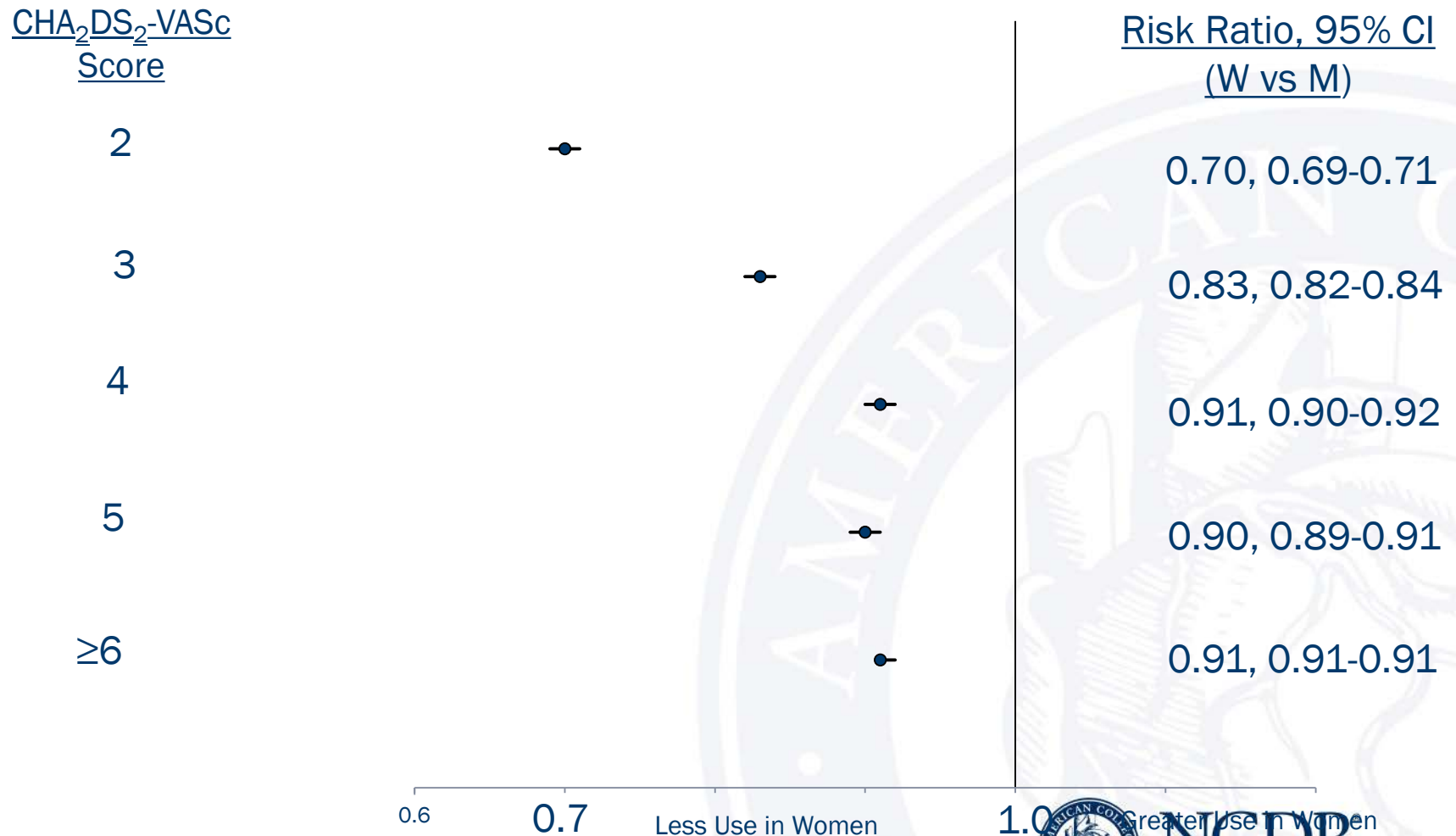
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Women less likely to get OAC in all thromboembolic risk strata



OAC use by stratified by CHADS2

