**Supplemental Material**

**Supplemental Result R1.** Risk stratification by CHADS$_2$ score

When using CHADS$_2$ to stratify the risk of stroke in AF patients, 866 (81.5%) patients had CHADS$_2$ ≥ 2. Undertreatment was found in 438 (50.6%) patients (Supplemental Table S1). Of these 866 patients, 465 were women and 401 were men. Undertreatment was not found to be significantly different between the two [women: 244 (52.5%) vs. men: 194 (48.4%), p = 0.257] nor was male sex a significant factor in multiple logistic regression. Undertreatment rate was not significantly different even after dividing the patients into four age groups based on age quartiles, and male sex was not a significant factor in multiple logistic regression in any of the sub-groups (Supplemental Table S1).

**Supplemental Table S1.** Anticoagulant undertreatment rates and logistic regression for patients with a CHADS$_2$ score ≥ 2 stratified

| Group | | All patients | Female patients | Male patients | p-value (Female vs Male) | Male Sex OR [95% CI] | p-value |
|---|---|---|---|---|---|---|---|
| | | **Undertreatment Rates** | | | | **Multiple Logistic Regression model for Undertreatment** | |
| **Total** | N | 866 | 465 | 401 | | | |
| | Undertreated | 438 (50.6%) | 244 (52.5%) | 194 (48.4%) | 0.257 | 0.82 [0.6 – 1.12] | 0.21 |
| **Group 1** (44.4 – 74.9 years) | N | 217 | 86 | 131 | | | |
| | Undertreated | 108 (49.8%) | 45 (52.3%) | 63 (48.1%) | 0.637 | 0.75 [0.4 – 1.41] | 0.37 |
| **Group 2** (74.9 – 81.5 years) | N | 217 | 97 | 120 | | | |
| | Undertreated | 98 (45.2%) | 49 (50.5%) | 49 (40.8%) | 0.198 | 0.72 [0.38 – 1.35] | 0.31 |
| **Group 3** (81.5 – 87.3 years) | N | 216 | 120 | 96 | | | |
| | Undertreated | 106 (49.1%) | 56 (46.7%) | 50 (52.1%) | 0.513 | 1.14 [0.62 – 2.11] | 0.67 |
| **Group 4** (87.3 – 89.0 years) | N | 216 | 162 | 54 | | | |
| | Undertreated | 126 (58.3%) | 94 (58.0%) | 32 (59.3%) | 1.0 | 0.92 [0.42 – 2.05] | 0.83 |

**Supplemental Result R2.** Risk of bleeding using the *limited HAS-BLED*

Among the 1015 patients, the median score for the *limited HAS-BLED* was not significantly different between the two sexes (women: median 2 [IQR 1 – 2], men: median 2 [IQR 1 – 3], p = 0.109). *Limited HAS-BLED* ≥ 3 was seen more in men [130 (24.3%) female patients vs. 141 (30.4%) male patients, p = 0.035]. After inclusion of *limited HAS-BLED* ≥ 3 to the multiple logistic regression model, the association of male sex with undertreatment was still not found to be significant (OR 0.82, CI 0.61 – 1.09, p = 0.18).

**Supplemental Table S2.** Summary of Relevant Studies

| Author, Year, and Region | Sample (n) | Type of Study | Results | Findings |
|---|---|---|---|---|
| Essien et al. 2020 United States | Total Patients: 42,952 Men: 25,017 (58.2%) Women: 17,935 (41.8%) | Retrospective study | Women less likely to initiate OAC (OR 0.59, CI 95% 0.55-0.64) | Among a group of Medicare beneficiaries, women less likely to initiate OACs |
| Thompson et al. 2017 United States | Total Patients: 691,906 Men: 356,150 (51.5%) Women: 335,756 (48.5%) | Retrospective study | Undertreatment of women at all $CHA_2DS_2$-VASc score $p < 0.001$ | Women had a higher risk of undertreatment across all levels of $CHA_2DS_2$-VASc |
| Yong et al. 2020 United States | Total Patients: 358,649 Men: 205,756 (57%) Women: 152,893 (43%) | Retrospective study | **Undertreatment** $CHA_2DS_2$-VASc $\geq 2$ 49.5% Female vs. 42.9% Male $p < 0.0001$ | Among patients with $CHA_2DS_2$-VASc $\geq 2$, women more likely to be undertreated |
| Bhave et al. 2015 United States | Total Patients: 517,941 Men: 209,788 (41%) Women: 308,153 (59%) | Retrospective study | **Treatment** 35.0% Female vs. 38.8% Male **OAC Odds ratio** OR [95% CI] 0.86 [0.86-0.87] $p < .001$ | Women are at higher risk of undertreatment with OAC |
| Xiong et al. 2015 China | Total Patients: 2,442 Men: 1,376 (56.3%) Women: 1,066 (43.7%) | Retrospective study | OAC use during hospitalization was 33.3% without sex differences | No sex disparity in OAC treatment |
| Li et al. 2019 China | Total Patients: 14,723 Men: 9,078 (61.7%) Women: 5,645 (38.3%) | Prospective study | **Undertreatment** $CHA_2DS_2$-VASc $\geq 2$ **Aged < 75** 32.1% Female vs. 30.1% Male $p = 0.081$; **Aged $\geq 75$** 34.6% Female vs. 35.3% Male $p = 0.700$ | No sex disparities found among males and females with $CHA_2DS_2$-VASc $\geq 2$ |
| Lip et al. 2014 Europe | Total Patients: 3,119 Men: 1,859 (59.6%) Women: 1,260 (40.4%) | Prospective study | **Treatment** $CHA_2DS_2$-VASc $\geq 2$ 95.3% Female vs. 76.2% Male $p < 0.0001$ | High rate of OAC prescription among females |
| Lip et al. 2015 International | Total Patients: 17,184 Men: 9,654 (56.2%) Women: 7,530 (43.8%) | Prospective study | **Undertreatment** $CHA_2DS_2$-VASc $\geq 2$ 38.4% Female vs. 35.4% Male | Rates of anticoagulant usage are similar in men and women. |
| Mazurek et al. 2018 International | Total Patients: 15,092 Men: 8,220 (54.5%) Women: 6,872 (45.5%) | Prospective study | **Treatment** **Globally** $CHA_2DS_2$-VASc $\geq 2$ 81.4% Female vs. 83.0% Male **North America** 75.9% Female vs. 80.4% Male | Rates of anticoagulant usage are similar in men and women, except in North America |
| Marzona et al. 2019 Italy | 2002 Total Patients: 35,595 Men: 17,689 (49.7%) | Retrospective study | **OAC Odds Ratio** OR [95% CI] **<65 years** 2002: 1.51 [1.35-1.69] | Female patients in the $\geq 75$ age group had an increased risk of OAC undertreatment |

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|---|---|---|---|---|
| | Women: 17,906 (50.3%)<br>2013<br>Total Patients:<br>33,295<br>Men: 17,323 (52.0%)<br>Women: 15,972 (48.0%) | | 2013: 1.35[1.17-1.57]<br>**65-74 years**<br>2002: 1.14 (1.06-1.241<br>2013: 1.12[1.02-1.24]<br>**≥75 years**<br>2002: 0.92[0.86-0.981<br>2013: 0.78 [0.73-0.82] | |
| Loikas et al.<br>2017<br>Sweden | Total Patients:<br>41,702<br>Men: 23,198 (55.6%)<br>Women: 18,504 (44.4%) | Cross-sectional study | **Treatment**<br>**2007-2011**<br>47.8% Female vs.<br>53.2% Male<br>**2011-2015**<br>70.5% Female vs.<br>70.1% Male | Sex differences reported for<br>2007-2011 with<br>low OAC usage among<br>women, but difference<br>disappeared in 2011-2015<br>except for females 80<br>years and older |