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Older patients with atrial fibrillation and comorbidities are less likely to be treated with oral anticoagulation: insights from a nationwide study

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Background: Older patients with atrial fibrillation (AF) often have multiple chronic conditions adding complexity to treatment decisions. However, regarding older AF patients, the association between multimorbidity and quality of care has not been explored previously in a non-selected nationwide cohort.

Purpose: To investigate the association between morbidity burden and the treatment with oral anticoagulation therapy (OAC) and rhythm-control strategies in patients >65 years of age with incident AF in Denmark.

Methods: Using Danish nationwide registers, we identified all Danish AF patients >65 years of age hospitalized for incident AF between 2010 and 2016. Using logistic regression models, we estimated the association between morbidity burden (<2, 2–3, 4–5, and >5 comorbidities) and the likelihood of receiving AF specific treatments. Estimates were reported as odds ratios with 95% confidence intervals (OR, 95% CI) with <2 comorbidities as reference. The primary outcome of interest was OAC therapy initiation. Secondary outcomes were initiation of anti-arrhythmic drugs (Class IC and Class III) and AF related procedures (electrical cardioversion and radiofrequency ablation). All models were adjusted for age, sex and calendar year.

Results: A total of 49,802 AF patients were eligible for inclusion, with a median age of 77.5 years (Interquartile range [IQR] 71.8–83.8) and 24,983 (50.2%) were male. A total of 25,181 (50.6%) patients had <2 comor-

bidities, 18,714 (37.6%) had 2–3 comorbidities, 4,891 (9.8%) had 4–5 comorbidities, and 1,016 (2.0%) patients had >5 comorbidities. The median CHA2DS2-VASc score ranged from 3 (IQR 2–3) to 5 (IQR 4–5) in patients with <2 comorbidities and >5 comorbidities, respectively.

Increasing morbidity burden was associated with decreasing odds of being treated with OAC therapy with the lowest odds in patients with >5 comorbidities (OR 0.39, 95% CI 0.34–0.45) compared with AF patients with <2 comorbidities. (Figure 1) Using morbidity burden as a continuous variable, an increment of one comorbidity was associated with decreasing odds of initiating OAC therapy (OR 0.85, 95% CI 0.84–0.86).

Morbidity burden was associated with increased odds of being prescribed anti-arrhythmic medication with the highest odds in patients with >5 comorbidities (OR 2.50 95% CI 2.08–2.99). In contrast, having >5 comorbidities was associated with decreased odds of AF related procedures (OR 0.32, 95% CI 0.23–0.43) compared to patients with <2 comorbidities.

Conclusion: Morbidity burden is strongly associated with OAC initiation and rhythm-control strategies in older patients with incident AF. Older AF patients with multimorbidity are less likely to be treated with OAC although these are the patients who benefit most from treatment. Therefore, initiatives and quality improvement programs should be done to close this important gap between clinical trials and clinical practice.

