Atrial Fibrillation (AF) - Prevalence and Incidence of Atrial Fibrillation

Scraping up CHA2DS2-VASc - defining components of the acronym in a nationwide registry study

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Introduction: Atrial fibrillation (AF) is a major cause of ischemic stroke. The risk of stroke is strongly associated with age, sex and comorbidities of the patients. Therefore, it is crucial that the comorbidities are consistently recorded in medical records as well as health care registries.

Purpose: This study aims to evaluate the prevalence of the comorbidities related to AF stroke risk in Finnish nationwide population registries, and assess how the use and combination of these registries affect the calculated CHA2DS2-VASc risk score. The comorbidities evaluated were Hypertension, Diabetes, Stroke or TIA, Heart Failure, and Vascular Disease.

Methods: The Finnish AntiCoagulation in Atrial Fibrillation (FinACAF) study collected data on all Finnish AF patients from 1st January 2004 to 31st December 2018. Due to the initiation of the national primary care register in 2012, this substudy uses the data of patients with a new AF diagnosis during 2012-2018 (n = 168 353). Using a unique personal identification code, individual patient data were linked from the Finnish national health care registries "AvoHILMO" (primary care) and "HILMO" (secondary and tertiary care), National Prescription Register (ATC codes of purchased medication) and the National Reimbursement Register for reimbursed medication upheld by the Social Insurance Institute (KELA).

Results

The average CHA2DS2-VASc risk score when entering the cohort, and including information from all registries, equaled 2.91 for men (mean age 70.0 years) and 4.42 for women (mean age 76.9 years). The highest prevalence of diabetes and hypertension were found based on the National Reimbursement Register (ATC codes). Stroke or TIA and heart failure were identified almost exclusively based on secondary and tertiary hospital records.

The table represents our results.

Conclusion: Comprehensive registry analysis of AF patients requires the inclusion of both hospital and medication data. The role of primary care information was limited.

Comorbidity and CHA$_2$DS$_2$-VASc weight	Total Prevalence	Primary care ICD-10 codes	Primary care ICPC-2 codes	Secondary and tertiary care ICD-10 codes	ATCcodes	Medication reimbursement codes
Hypertension 1	82% 137 317	28% 47 337	13% 21 427	39% 66 252	77% 130 400	7% 10 957
Diabetes 1	24% 41 017	13% 22 666	13% 22 547	14% 23 793	21% 35 942	12% 20 295
Stroke or TIA 2	17% 28 653	4% 6 254	1% 1 968	16% 27 379	-	-
Heart Failure 1	18% 29 827	5% 7 630	1% 1 398	16% 26 366	-	1% 1 908
Vascular Disease 1	28% 47 420	12% 19 581	2% 3 265	25% 41 647	-	7% 11 802
Average CHA$_2$DS$_2$-VASc contribution	1.86	0.65	0.31	1.26	0.99	0.26

The prevalence of the comorbidities and average CHA2DS2-VASc risk score contribution by registry and combined.