The current and future total health care costs of atrial fibrillation

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Background: Atrial fibrillation (AF) is the most common arrhythmia encountered in clinical practice, yet detailed information on the cost burden remains sparse. These data are essential for determining resource allocation, benchmarking care, identifying areas for more efficient healthcare delivery and to measure effects of alternative treatment strategies.

Purpose: We sought to examine costs for inpatient, ambulatory, physician, and drugs for AF and model future costs.

Methods: In this retrospective population-based cohort study, we used linked administrative databases to identify all adult patients presenting to any healthcare setting with nonvalvular AF (NVAF) as the most responsible diagnosis in our city, Canada, from fiscal years 2010-2018. Costs for inpatient, ambulatory, physician, and drugs were estimated, in 2019 Canadian dollars, by using Statistics Canada Consumer Price Index. A two-part cost model with logit and gamma generalized linear model was developed to predict costs from 2019 to 2030.

Results: There were 48,854 NVAF patients. The median age was 70 [59.0,80.0] years, 55% were male, and median CHADS-Vasc score = 3.0 [1.0,4.0]. NVAF-related costs were $1.4 billion dollars (inpatient $1.1 billion, ambulatory $107.0 million, physician $59.6 million, drugs $140.1 million) and represented 36.8% of total costs (Figure 1). The per patient cost of NVAF was $30.1 thousand. Over the study period, costs increased by 2.2% for inpatient, 40.5% for ambulatory, 67.1% for physician, and 214.2% for drugs. By 2030, we estimate there will be 54,523 NVAF patients. NVAF-related costs from 2019 to 2030 are estimated to be $3.6 billion (inpatient $2.5 billion, ambulatory $310.5 million, physician $197.5 million, drugs $610.4 million) and will represent 32.1% of total costs (Figure 1).

Conclusions: Costs for AF are on the rise and the distribution of costs are changing. Although inpatient costs represent the highest proportion of total AF costs, they are projected to decrease while costs due to ambulatory, physician and drug costs are increasing.