

THE BURDEN OF ATRIAL FIBRILLATION

Executive Summary of 2018 Report

Understanding the Impact of the New Millennium Epidemic across Europe

OVFRVIEW

Atrial Fibrillation is fast becoming one of the world's most significant health issues that places a critical burden on healthcare systems

ATRIAL FIBRILLATION What is Atrial Fibrillation and why is it important?

Atrial fibrillation (AF) is characterized by an irregular and often fast heartbeat that results in uncoordinated contraction of the top 2 chambers of the heart (i.e., atria).









million annually across European countries.²⁰⁻²⁴

EPIDEMIOLOGY OF AF

AF is a new millennium epidemic that affects millions of lives mostly affecting the middle-aged and elderly.

OVER 11M PEOPLE AFFECTED IN EUROPE How common is AF?

AF is the most common type of cardiac arrhythmia, affecting over 886,000 new people each year in Europe.²⁵

Over **1 Million people suffer with AF** in each of France, Germany, Italy, and the UK.²⁵

HOW WILL AF AFFECT EUROPE IN THE FUTURE?

With more patients suffering with atrial fibrillation, rates for strokes, hospitalizations, and doctor visits are expected to rise.

280K-







DEMOGRAPHICS OF AF Who is at risk for AF?

AF is a common age-related arrhythmia: ^{3; 26; 27} it mostly affects people 40 years old and older and is more common in men.

40+

40 YEARS AND OLDER develop AF in their lifetime.²⁷

65+

or Atrial Flutter ARE 65 YEARS OLD OR OLDER²⁵



In adults of European descent older than 40 years, men are 13% more likely to develop AF than women during their lifetime.27







DEVELOP AFTHAN WOMEN DURING THEIR



CAUSE AND RISK FACTORS OF AF

AF develops from structural changes to the heart due to lifestyle, other chronic conditions, and nonmodifiable factors.

WHAT CAUSE AF?

AF is most often caused by structural changes to the heart due to other conditions and lifestyle factors. AF is an irregular and often rapid heartbeat that occurs when there are extra, uncoordinated electrical signals in the atria.1 **Common causes of AF** Abnormalities or damage to the heart's structure are the most common cause of AF, and this can be caused by:^{2,3,27, 31} Sleep apnea An overactive thyroid gland or High blood pressure other metabolic imbalance Heart attacks Coronary artery disease Abnormal heart valves Heart defects you're born with (i.e., congenital) Lung diseases Previous heart surgery Stress due to pneumonia, Sick sinus syndrome (i.e., surgery or other illnesses improper functioning of the heart's natural pacemaker)

Other factors that cause AF:

Exposure to stimulants, such as medications, caffeine, tobacco or alcohol

WHAT FACTORS LEAD TO AF?

the risk of developing AF.





Obesity³¹⁻³⁴

- Alcohol consumption^{3; 34; 35}
- Risks for cardiovascular disease: smoking, stress, caffeine and other stimulants³
- Activity level^{2; 3; 34}

OTHER CONDITIONS

- High blood pressure³⁴
- Heart failure^{27; 30; 36-39}
- History of heart attack^{27; 40}
- Coronary artery and other heart disease^{27; 32}
- Previous surgery^{41; 42}
- Sleep-disordered breathing (eg, obstructive sleep apnea)^{34; 43}
- Diabetes^{34; 44}

Lifestyle factors, other conditions, and non-modifiable factors increase

NON-MODIFIABLE FACTORS

- Older age^{3; 45}
- Congenital heart defects⁴⁴
- Family history or other genetic factors27; 46; 47
- Male sex^{3; 27; 45}

CLINICAL BURDEN

The symptoms and clinical consequences of AF disrupt patient quality of life and increase the risk of mortality.

WHAT ARE THE SYMPTOMS OF AF?

Symptoms of AF disrupt daily life and range from mild to debilitating.^{14; 48-49} The most common symptoms are:8; 30; 50



The frequency and severity of symptoms varies a lot from patient to patient and, within a patient, symptoms can fluctuate widely over time.8

severity due to lack of treatment:

15%-30% have SILENT AF^{8; 28}



AF increases the risk of:^{30; 40; 43}

Mortality:

AF is independently associated with a significantly greater risk of mortality.



Stroke:

a serious complication of AF that is associated with long-term disability and mortality.



Heart attack:

a serious complication of AF that also significantly increases the risk of stroke and mortality.

Patients who do not experience symptoms of AF may be at greater risk of complications and disease





Heart failure and left ventricular dysfunction:

a common complication of AF that increases the risk of mortality and lengthens hospital stay.





HEART

DEMENTIA OR COGNITIVE

IMPAIRMENT*

Cognitive dysfunction or vascular dementia:

a complication of AF that causes a decline in memory and thinking skills, which can interrupt daily life and independent function.





Obstructive sleep apnea:

is common in AF patients and may increase the risk of stroke, heart failure, and AF recurrence.

PATIENT BURDEN

AF worsens the quality of life for patients, which can be burdensome to caregivers.

WHY DO PEOPLE WITH AF SEEK **MEDICAL TREATMENT?**

AF symptoms and repeated recurrence increase unplanned medical visits and hospitalizations.



SYMPTOMS 69 PATIENTS WITH AF, **EVEN IF THEY ARE OCCUR IN BEING TREATED**^{8; 53}

Symptoms are a major reason why patients with AF seek medical attention.⁸

Clinical decision-making can be challenging because symptoms related to AF can differ a lot between patients and within patients at different time points.8

AF and its related symptoms are a major therapeutic challenge and burden to healthcare systems.⁸

2/3 of

EMERGENCY ROOM VISITS for SYMPTOMS LEADING to AF DIAGNOSIS result in

HOSPITAL ADMISSIONS⁸



Role Physical



Mental Health



Social Functioning



Abbreviations: AF = atrial fibrillation; CHF = congestive heart failure; PTCA = percutaneous transluminal coronary angioplasty in patients with coronary artery disease Source: Dorian et al. (2000)52

AF type has been associated with perceived symptom severity and reductions in quality of life.¹⁴

Patients with intermittent AF (paroxysmal and early persistent AF) had worse impairment of quality of life than those with chronic AF (persistent and permanent AF).¹⁴



ECONOMIC BURDEN

AF increasingly places a critical financial burden on healthcare systems.

WHAT ARE THE DIRECT AND INDIRECT **COSTS OF AF?**

Direct and indirect costs for the management of AF are highly variable across European countries.

Costs for AF management can be divided into 2 groups:

DIRECT COSTS

Hospitalization **Outpatient and Physicians Visits Prescriptions Laboratory Testing** Long-term Care

INDIRECT COSTS



€16 BILLION **DUE TO INFORMAL CARE**



Direct costs of AF are high, accounting for:



Annual direct per-patient costs of AF are similar in France, Germany, Italy, and the UK.^{23; 24; 54-56}

Indirect costs reported are highly variable by country, with highest costs in Germany.24; 55; 56

Indirect costs related to AF were higher for paroxysmal and persistent AF, whereas those not related to AF were higher for permanent AF.55

HOW DOES STROKE AFFECT THE COST OF AF?

The cost for the treatment and prevention of stroke in AF is high, contributing substantially to the total cost of AF management.

WITH AF is

In 2015, stroke was estimated to cost €45 billion a year in the European Union:64

In Europe, the COST of STROKE IN PATIENTS 7% TO NEARLY 60% HIGHER than in PATIENTS WITHOUT AF52; 57-63

DUE TO PRODUCTIVITY LOSSES

CONCLUSIONS

The burden of AF is high and places a critical financial burden on healthcare systems in Europe.



Major health modifiers that cause AF

The major causes of AF require better characterization by patient group, and should consider the key comorbidities associated with AF and pathophysiologically distinct types of AF.³ In the different patient subgroups, how many patients have AF, what is the impact on disease progression, and what are the management costs?

Treatment outcomes and quality of life and risk of stroke



Europe is projected to have **the greatest number of AF patients** compared to other regions RY globally.²⁹ This is expected to increase the number of stroke events, hospitalizations, and 2050 doctor visits, ultimately raising the cost to national healthcare systems.³⁰

The 2016 European Society of Cardiology's Guidelines for the Management of AF and the 2017 HRS/EHRA/ ECAS/APHRS/SOLAECE Expert Consensus Statement on Catheter and Surgical Ablation of Atrial Fibrillation highlight several gaps in the evidence, where evidence is currently being developed or requires more recent and/or better studies.^{2; 3} Key areas for future research include the following:

National and regional burden of AF

Most of the evidence on the national or regional burden of AF in Europe, particularly future projects on the total number of patients affected, number of new patients, and cost of AF, are based on data collected over 10 years ago, and are therefore outdated. Recent data from methodologically robust studies are needed to understand the current epidemiologic and cost burden of AF for Europe and individual **European countries.**

Risk of stroke in specific AF populations

Several specific AF groups should be studied to better characterize their risk for AF, stroke, and other AFrelated comorbidities (e.g., patients with one stroke risk factor, non-Caucasian patients, women patients).³ Differences in overall patient management (e.g., different treatment for concomitant cardiovascular diseases) may help explain the variability in the reported rates of new (incident) AF cases, all (prevalent) AF cases, and AF complications.

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The totality of evidence on AF underscores its role in reducing quality of life and in increasing the risk of stroke.

If treatments for AF aim to reduce or eliminate AF, how do different treatment outcomes relate to quality of life and stroke risk?

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