

## New clinical perspectives on atrial fibrillation: GARFIELD-AF results from Germany

### Background Information

#### About the GARFIELD-AF Registry

GARFIELD-AF is a worldwide prospective registry that aims to enhance the breadth and depth of understanding of stroke prevention in atrial fibrillation (AF), ultimately informing strategies to improve patient outcomes, safety and utilisation of healthcare resources.

It offers a unique opportunity to obtain a comprehensive and contemporary description of the spectrum of patients with AF and their management worldwide as they evolve over time. The evidence from GARFIELD-AF is bridging the gap between research and clinical practice, serving to increase awareness of the importance of thrombosis and its treatment.

GARFIELD-AF recruited patients with newly diagnosed nonvalvular AF and at least one risk factor for stroke. A total of 57,262 patients were recruited from 1352 centres in 35 countries worldwide, including the Americas, Europe, Africa and Asia-Pacific. Patients were enrolled in five sequential cohorts between 2009 and 2016. Patients are being followed-up for minimum of 2 years and up to 8 years, to create a comprehensive database of the evolution of treatment decisions and outcomes in everyday clinical practice. The study ends in September 2018.

A description of the findings for patients recruited from Germany are outlined below.

### Results from Germany

#### Characteristics of patients with newly diagnosed AF

Of the 52,014 prospective patients recruited globally, 3,568 were from Germany. The average age of German patients was 71.4 years (vs. 70.7 in Europe and 69.7 years globally) at the time of diagnosis of AF and patients had a mean body mass index of 29.2 kg/m<sup>2</sup> (vs. 28.9 kg/m<sup>2</sup> in Europe and 27.8 kg/m<sup>2</sup> globally). Common comorbidities in patients from Germany included: heart failure 19% of patients; history of hypertension 86.4%; diabetes mellitus (type 1 or 2) 28.5%; prior stroke/transient ischaemic attack 12.5%; chronic kidney disease (grade  $\geq 3$ ) 9.6%. The mean CHA<sub>2</sub>DS<sub>2</sub>-VASc score at the time of diagnosis of AF was 3.5 for patients from Germany (vs. 3.3 in Europe and 3.2 globally).



#### About Atrial Fibrillation (AF)

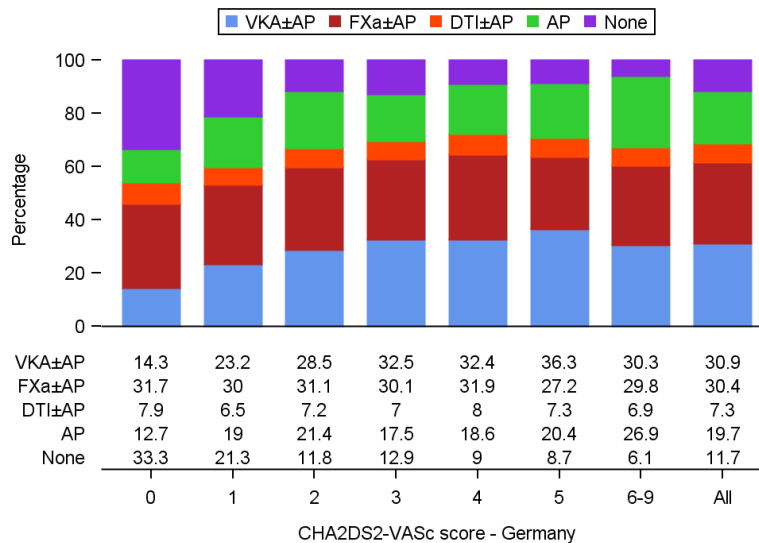
- AF is a problem with the rate or rhythm of the heartbeat. When AF occurs, rapid disorganised electrical signals cause the heart's two upper chambers, called the atria, to contract very fast and irregularly. This stops the heart being able pump out enough blood per beat and results in blood pooling. Blood pooling increases the risk of clotting, and blood clots can cause thrombosis, which is the number one cardiovascular killer in the world.<sup>1</sup>
- Up to 2% of the global population has this type of arrhythmia,<sup>2</sup> including around 8.8 million people in Europe<sup>3</sup> and 5–6.1 million in the United States.<sup>4</sup> It is estimated that its prevalence will at least double by 2050 as the global population ages.<sup>4</sup>
- A blood clot leaving the left atrium could lodge in an artery. If the artery leads to the brain or heart this could cause a stroke or heart attack respectively.<sup>5</sup>
- AF is associated with a five-fold increase in stroke risk and 20% of strokes are associated with AF.<sup>2</sup> Ischaemic strokes related to AF are often fatal, and those patients who do survive are left more frequently and more severely disabled with a greater risk of recurrence than patients with other causes of stroke.<sup>2</sup> Overall, the risk of mortality from AF-associated stroke is doubled and the cost of care is 50% higher.<sup>2</sup>
- People with AF often have comorbid heart failure and a history of other cardiovascular diseases and risk factors. Consequently, the healthcare costs associated with AF are substantial.

Interestingly care settings at diagnosis of AF were very different for patients in Germany compared to Europe and globally (see table).

Care setting at diagnosis, %	Germany (N=3568)	Europe (N=29,941)	All countries (N=52,014)
<b>Cardiology</b>	31.9	56.3	65.7
<b>Geriatrics</b>	0.7	0.5	0.4
<b>Internal medicine</b>	35.7	21.1	18.0
<b>Neurology</b>	0.6	2.1	1.7
<b>Primary care/general practice</b>	31.1	20.0	14.2

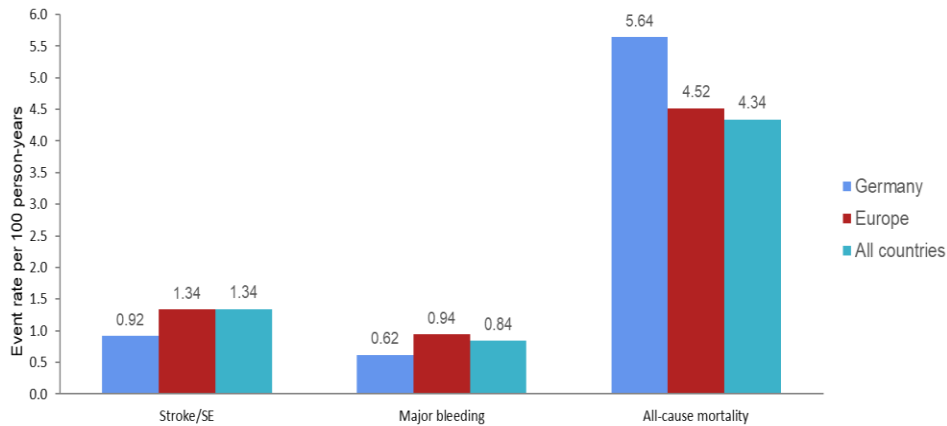
### Choice of stroke prevention treatment in patients newly diagnosed with AF in Germany

Prospective Cohorts 1–5. Germany: N=3568



For patients recruited prospectively into GARFIELD-AF between 2010 (Cohort 1) and 2016 (Cohort 5), most patients in Germany received anticoagulant +/- an antiplatelet [AP] (68.6%) , including 37.7% of patients on non-vitamin K antagonist oral anticoagulant (NOACC) and 30.9% on vitamin K antagonist (VKA) +/- AP. Reflecting the prescribing trends observed globally, clinicians from Germany withheld anticoagulation in higher-risk patients (with a CHA<sub>2</sub>DS<sub>2</sub>-VASc score ≥ 2) in approximately 30% of cases while prescribing of anticoagulants (for stroke prevention) was common among patients with a low stroke risk: 54.0% of patients (with a CHA<sub>2</sub>DS<sub>2</sub>-VASc score of 0) and 59.7% of patients (with a CHA<sub>2</sub>DS<sub>2</sub>-VASc score of 1)

## Rates of stroke/systemic embolism, major bleeding and all-cause mortality 1 year after diagnosis of AF



Prospective patients, Cohorts 1–5. Germany N=3568; Europe: N=29,941; All countries: N=52,014 Patients enrolment: Mar 2011–Aug 2016. Follow up: to Jun 2017

The analyses from GARFIELD-AF showed that the rate of all-cause mortality was higher in Germany 1 year after the diagnosis of AF (5.64 per event rate per 100 person years) compared to Europe (4.52) and globally (4.34). However, rates of stroke/systemic embolism (0.92 event rate per 100 person years vs. 1.34 and 1.34) and major bleeding (0.62 event rate per 100 person years vs. 0.94 and 1.84) were lower.

For more information, visit [www.garfieldregistry.org](http://www.garfieldregistry.org).

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### About the TRI

The Thrombosis Research Institute (TRI) is dedicated to bringing new solutions to patients for the detection, prevention and treatment of blood clots. The TRI's goal is to advance the science of real-world enquiry so that the value of real-world data is realised and becomes a critical link in the chain of evidence. Our pioneering research programme, across medical disciplines and across the world, continues to provide breakthrough solutions in thrombosis. For more information, visit [www.tri-london.ac.uk/](http://www.tri-london.ac.uk/).

### References

<sup>1</sup> National Heart, Lung, and Blood Institute. What is Atrial Fibrillation? Available at: <http://www.nhlbi.nih.gov/health/health-topics/topics/af/>. [Last accessed: 27 August 2018]. <sup>2</sup> Camm A J, Kirchhof P, et al. Guidelines for the management of atrial fibrillation: The Task Force for the Management of Atrial Fibrillation of the European Society of Cardiology (ESC). *Eur Heart J* 2010; 31(19):2369-429. <sup>3</sup> Krijthe B P, Kunst A, et al. Projections on the number of individuals with atrial fibrillation in the European Union, from 2000 to 2060. *Eur Heart J* 2013; 34:2746-51. <sup>4</sup> Colilla S, Crow A, Petkun W, et al. Estimates of current and future incidence and prevalence of atrial fibrillation in the U.S. adult population. *Am J Cardiol* 2013; 112(8):1142-7. <sup>5</sup> World Thrombosis Day. Know Thrombosis. Available at: <http://www.worldthrombosisday.org/issue/thrombosis/>. [Last accessed: 27 August 2018].