STEEER-AF

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CARDIOPULSE

STEEER-AF: a cluster-randomized education trial from the ESC

The STEEER-AF trial is designed by the European Society of Cardiology (ESC) to see if better education for healthcare professionals can improve how patients are treated and how AF is managed.

STEEER-AF will bring together the best that the ESC, European Heart Rhythm Association (EHRA) and the ESC Council on Stroke can provide in terms of learning resources, and provide a blueprint for better education across cardiovascular health. Our aim is to prevent strokes and other adverse outcomes, and improve quality of life for patients.

The need for new evidence

Atrial fibrillation (AF) is predicted to double in prevalence over the next few decades, placing an increasing burden on patients and healthcare services.[1,2] The management of AF is complex and appropriate treatment relies on good knowledge and skills of healthcare staff.[3] Guidelines produced by the ESC are designed to assist healthcare professionals to provide optimal care for patients with AF.[4] Treatment that is adherent to guidelines leads to lower rates of mortality, incident stroke, and major bleeding.[5–7] However, there is a major challenge across the ESC to apply guidelines correctly, with significant gaps in the knowledge and skills of healthcare professionals treating AF patients, particularly for stroke prevention and rhythm control therapy.[8,9]

The response by the ESC

The ESC has taken unprecedented steps in recent years to improve education for healthcare professionals in cardiology. This includes many new educational concepts in congresses, online learning, smartphone applications, curriculum development, and collaboration with National and international societies, in addition to the major update of the ESC textbook.[10] The ESC and its associations have made a concerted effort to educate a variety of healthcare professionals and provide guideline-related training and support.[11] We have adopted a multi-faceted educational approach to make the best use of digital learning opportunities.[12,13]

However, the true value of these educational approaches is unknown. Considering the time and expense required to train a workforce and keep staff updated, randomized controlled trials are needed to evaluate the effectiveness of AF education. Previous trials have demonstrated the potential of education to impact patient-level treatments such as anticoagulation;[14] the ESC will now embark on a trial that includes the best of its broad learning interventions, with the aim of improving guideline-adherent therapy and outcomes for patients with AF.

Trial design

The STEEER-AF trial (*S*troke prevention and rhythm control *T*reatment: *E*valuation of an *E*ducational programme of the *E*uropean Society of Cardiology in a cluster-*R*andomised trial in patients with *A*trial *F*ibrillation) is a joint effort by the ESC Education team, EHRA, and the ESC Council on Stroke. This pragmatic trial will operate in six large ESC countries (France, Germany, Italy, Poland, Spain, and the UK) and is led by investigators from those six countries, supported by

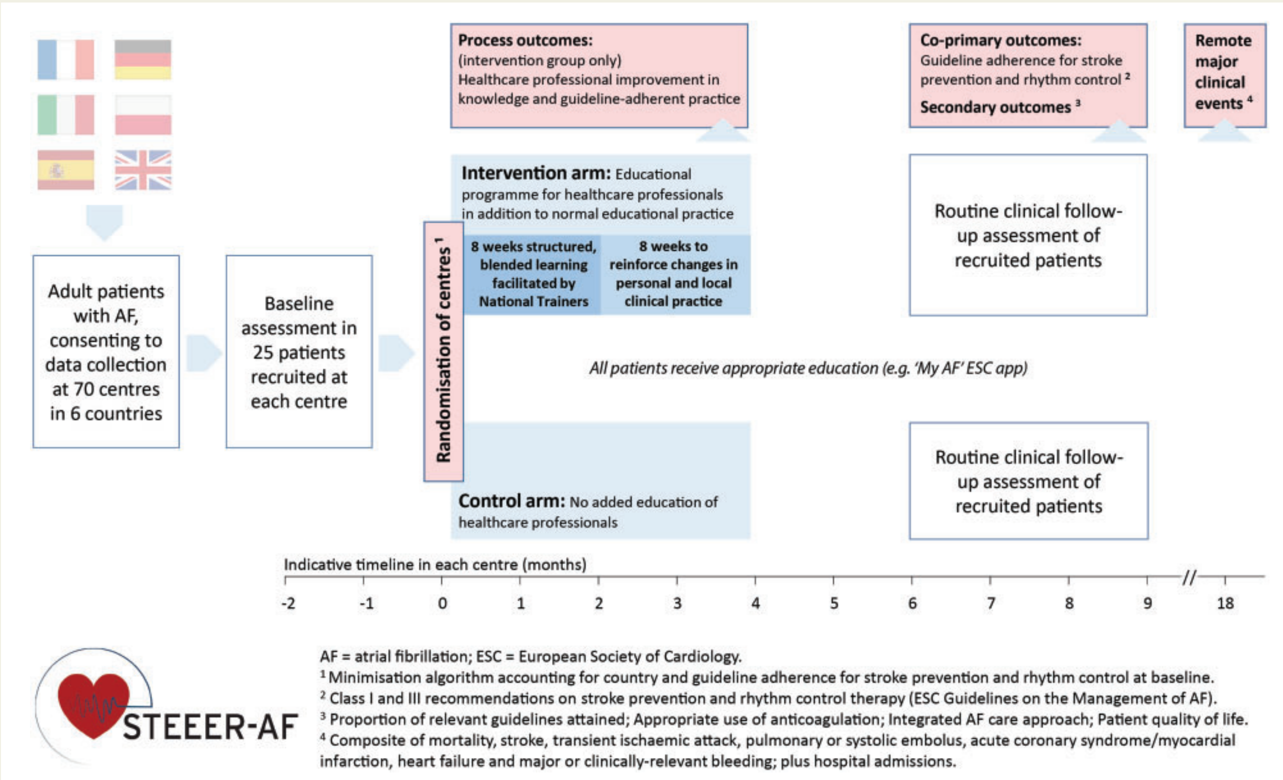

Figure 1: STEEER-AF summary.

a central team at the ESC. The primary objective of STEEER-AF is to determine whether a comprehensive educational programme for healthcare professionals who treat patients with AF, compared to no added education, will improve guideline-adherent treatment for stroke prevention and rhythm control. The secondary objectives will assess the provision of integrated care, patient-reported quality of life, and the impact on major adverse clinical outcomes. To avoid contamination of effect across neighbouring individual patients, STEEER-AF will use a cluster-randomized approach. Within each country, hospitals/health centres will be randomized to receiving the intervention or control, taking account of the current adherence to guidelines to provide balanced groups.

Around 70 centres are expected to take part in STEEER-AF, with each centre recruiting 25 adult patients who have been diagnosed with AF and consent to data collection (*Figure 1*). Centres are required to complete recruitment before they are randomized. In centres that are randomized to the intervention, healthcare professionals who have treated these AF patients will receive a specifically designed educational programme, supported by trained trainers in each country. Centres randomized to the control group will receive whatever usual education is offered to healthcare professionals. The same patients will be reviewed after 6–9 months as part of routine clinical care, and remote collection of major clinical events will occur at 18 months.

National and International collaboration

At the heart of STEEER-AF is cooperation within and across borders to improve the care that patients with AF receive. We are indebted to the Principal Investigators at each centre, the National Trainers, those supporting the Country Leads, staff at the ESC, EHRA, and ESC Council on Stroke, the Birmingham Clinical Trials Unit, and the members of the international oversight committees (see Supplementary material online, *Appendix*). We wish to thank the Patient Involvement Team for their assistance in designing this trial to meet the needs of patients with AF and writing patient-facing documents (Mary Stanbury, patient representative; Jaqueline Jones, public representative; and Trudie Lobban, AF patient association representative). The start of STEEER-AF was delayed due to the current coronavirus pandemic; we aim to commence this trial when it is safe to do so and according to national lockdown policies.

We are grateful to Boehringer Ingelheim, BMS/Pfizer Alliance, Bayer, Daiichi Sankyo and Boston Scientific for providing unrestricted educational grants to the ESC to help fund this trial. We also acknowledge support from the Oxford Biomedical Research Centre, funded by the National Institute for Health Research (NIHR). The views expressed are those of the authors and not of the funders listed. To avoid introducing bias, the specifics of the

educational programme will only be released after recruitment and education have been completed. After this time, the full protocol for the trial will be available at the STEEER-AF website (www.escardio.org/aftrial).

Supplementary material

Supplementary material is available at *European Heart Journal* online.

Conflict of interest: none declared; see ESC disclosures.

References

References are available as supplementary material at *European Heart Journal* online.

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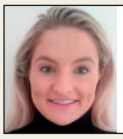

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TeleCheck-AF for COVID-19

A European mHealth project to facilitate atrial fibrillation management through teleconsultation during COVID19

During the coronavirus 2019 (COVID-19) pandemic, traditional face-to-face consultations in atrial fibrillation (AF) outpatient clinics were rapidly transferred into teleconsultations, which were initially conducted without any information on heart rhythm or heart rate of the patients. To guarantee the continuity of comprehensive AF management through teleconsultation during COVID-19, we developed a mobile health (mHealth) intervention at the Maastricht Medical University Centre to support AF teleconsultations: TeleCheck-AF.

TeleCheck-AF incorporates three important components: (i) a structured teleconsultation ('Tele'); (ii) an app-based on-demand heart rate and rhythm monitoring infrastructure ('Check'); and (iii) comprehensive AF management ('AF'). The on-demand heart rate and rhythm monitoring infrastructure is based on a CE-marked mobile phone app (www.fibricheck.com) using photoplethysmography (PPG) technology through the built-in camera allowing semi-continuous heart rate and rhythm monitoring of AF patients prior to and during the teleconsultation.

A secretary acts as case coordinator and calls all patients scheduled for teleconsultations in the following week. The patients are instructed why and how to download the mobile phone app and to measure heart rate and rhythm three times per day and note any symptoms. An mHealth prescription (QR-code) activates the app and links the app to a secured cloud accessible by the treating physician. The submission of the recordings to the cloud stops when the prescription (7 days) expires. This on-demand mHealth approach enables the physicians to use heart rate and rhythm data for treatment decisions and prevents unnecessary data collection which would be associated with continuous long-term rhythm monitoring (e.g. wearables or CIEDs) which need to be managed afterwards. The TeleCheck-AF approach is summarized in *Figure 1*.

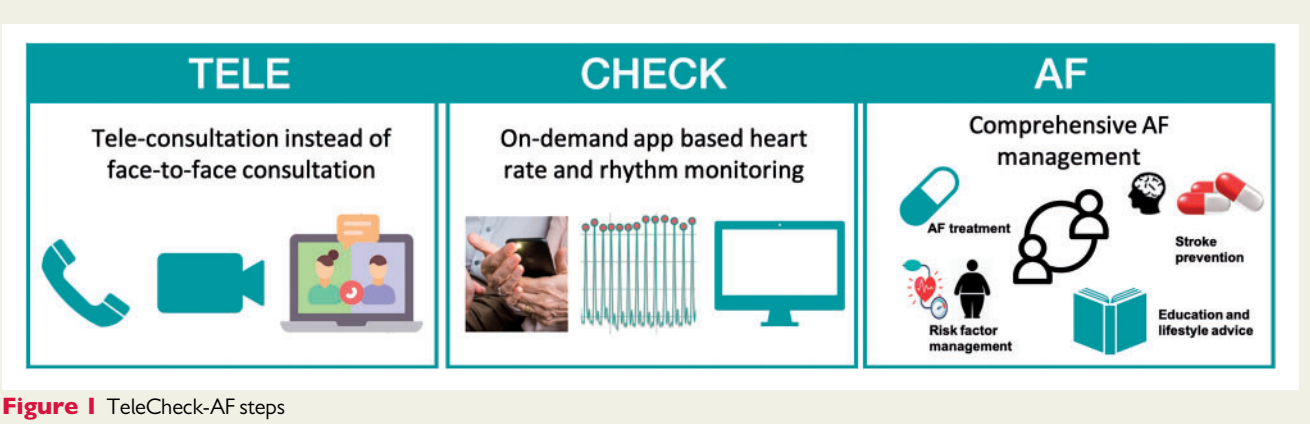

Figure 1 TeleCheck-AF steps