**What lifestyle management interventions are needed for atrial fibrillation?**

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**The burden of atrial fibrillation**

In the last two decades the number of people living with the heart arrythmia atrial fibrillation (AF) has increased by 72% in the UK (1), and AF-related mortality has doubled. This increase is attributable to an aging and more unhealthy population. It is estimated to account for 0.9%-1.6% of NHS expenditure, approximately £1435-2548 million annually. AF is associated with an increased risk of stroke, heart failure and dementia (1), and modifiable risk factors include blood pressure, obesity, excess alcohol, smoking, poor glycaemic control, lack of exercise, and obstructive sleep apnoea (2). The ‘C’ in the Atrial fibrillation Better Care (ABC) treatment pathway represents cardiovascular and comorbidity optimisation, and targeted interventions aimed at risk factor reduction could have wide reaching benefits for individuals with AF.

**Could risk factor reduction interventions for atrial fibrillation fit with current UK cardiac rehabilitation models?**

Cardiac rehabilitation (CR) is a Class I recommendation for patients with acute coronary syndrome, newly diagnosed chronic heart failure, heart transplant, valve replacements or confirmed diagnosis of exertional angina (3-6). CR is a cost-effective intervention that reduces mortality, morbidity, unplanned hospital admissions, and improves quality of life and psychological well-being in specific patient groups (7, 8). Recommended components include nutritional counselling, risk factor modification, medical risk management, psychological management, patient education and exercise training (9). The benefits of CR for AF patients are unproven, although similar components are recommended within the AF integrated care approach. This does not mean that UK CR is suitable for AF patients.

CR effectiveness is currently limited by issues with poor uptake, retention, delivery mode and suitability of the education component. For example, while the benefits of CR are comparable in men and women, women are less likely to enrol (10) and adhere than men (11).Age, co-morbidity, mental health, disease severity, family obligations or responsibility, and low-socioeconomic status are common barriers for women (12).In addition, UK usual practice of offering group-based CR can mean exercise options are limited, as is individual time with patients, and educational content is planned to suit most attendees. Rather than adding the option for AF patients to attend existing CR programmes, it would be more appropriate to pilot risk reduction interventions individualised to their needs.

**What should be included in atrial fibrillation risk reduction interventions?**

The development of new pilot AF risk reduction interventions should be co-designed with patients to ensure that they are appropriate for the needs of people living with AF. This co-design process should involve highlighting current AF integrated care and CR recommendations. It is likely that AF risk reduction intervention pilots will be delivered by a multidisciplinary team and include established support elements used in CR: a) an initial assessment b) lifestyle risk factor management c) long-term maintenance of behaviour change and, d) psychosocial health support (8). The co-design process should consider individualised telehealth, community, or home-based delivery models, which are proven to be effective modes of delivery in CR (13). Structured programmes may incorporate behaviour change techniques with motivational, goal-directed psychoeducational components to provide disease education to improve elements of AF self-management such as weight management, smoking cessation, and medication adherence to stroke prevention anticoagulants.

AF risk reduction interventions are also likely to include physical activity. There is a growing body of evidence that exercise-based interventions for those with AF are safe and do not increase the occurrence of AF (14). AF populations are highly comorbid and individuals with higher initial symptom burden and more risk factors stand to gain more benefit from engaging in some form of exercise-based intervention (15). The long-term benefits for exercise on AF related morbidity and mortality remain unclear (16) but patients have been shown to experience reduced symptom burden, ventricular response rate, time in arrythmia and improved exercise capacity (16-18). Anxiety around exercise is common for people with AF (19) due to fear of exertion triggering symptoms, so it is important that exercise is supported by a psycho-educational component.

Pilot programmes should be robustly evaluated to assess effectiveness.

**What should atrial fibrillation risk reduction interventions be called?**

We suggest that the term ‘cardiac rehabilitation’ is not appropriate for AF risk reduction interventions (and question whether it is appropriate for any post cardiac event risk reduction intervention). When CR was established, patients were recommended long periods of rest after myocardial infarction, and to undertake carefully monitored exercise-based rehabilitation before individuals returned to normal activities. Improvements in acute treatments and medication have reduced the ‘rehabilitation’ required and CR is now a lifestyle risk reduction programme. In Scotland, the SIGN guidelines acknowledge that the term CR is outdated (8). For the AF population, who do not necessarily experience a catalytic health event from which they recover, rehabilitation seems even more inappropriate. Alternative terms beginning to populate the literature include “*comprehensive risk reduction”, “psychoeducational and physical activity risk factor management”, “risk factor management” and “integrated lifestyle change”.*

**Conclusion**

We suggest the need for pilot programmes for lifestyle risk reduction for those with AF and call for an open discussion about the terminology to describe current CR programmes for those with established cardiovascular disease.

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