Physical activity and atrial fibrillation

Tom Marshall

Atrial fibrillation is primarily a problem of older age and the risk factors for atrial fibrillation in older age are well described: older age, male sex, valve disease, heart failure, systolic blood pressure and Body Mass Index. But a significant minority of atrial fibrillation presents in younger patients without obvious morbidities or risk factors: lone atrial fibrillation. This may have a more benign prognosis to atrial fibrillation in older adults.2

A persistent puzzle about the causes of lone atrial fibrillation has been the relationship between physical activity and the onset of lone atrial fibrillation. Could being more physically active also have adverse consequences?

Plausible mechanisms have been advanced for an increased risk of atrial fibrillation in endurance athletes: increased left atrial volume and left ventricular hypertrophy.3 But before we explain the association we must establish if indeed there is an association to explain.

A recent review of the evidence suggests an apparent link between endurance training and an increased risk of atrial fibrillation.4 Prospective epidemiological studies have suggested a U shaped relationship between level of physical activity and risk of atrial fibrillation in older adults.5 Some suggest that the effect may be confined to men aged under 50.6 But others are more sceptical of the epidemiological evidence, drawing attention to the potential for confounding.7,8

A recent analysis by Williams and Franklin observed a reduced risk of arrhythmia with increasing levels of physical activity in both walkers and runners.9 However, arrhythmias were self-reported, not clinically confirmed and the protective association with increasing physical activity appeared to be stronger in walkers than runners.

Thelle et al have conducted the largest epidemiological investigation into the relationship between physical activity and atrial fibrillation using data collected as part of a Norwegian screening programme of men and women in their early forties.10 Over 5 years of follow-up they found a consistent relationship between a lower resting pulse rate and an increased risk of atrial fibrillation. They also found a consistent relationship between increasing levels of reported physical activity and risk of atrial fibrillation in men, but not in women. The relationship in men reporting intense levels of physical activity was particularly striking. The study has limitations: as in the study of Williams and Franklin, the outcome of atrial fibrillation was not diagnosed clinically. Instead, it was inferred from the prescription of flecainide or sotalol; however, this is likely to be a more reliable indicator than self-report. The relationship between physical activity and risk of atrial fibrillation was large; it was present when both self-reported activity levels or resting pulse was used as a proxy for level of physical activity. The effect was not greatly affected by adjustment for potential confounders; there is a clear dose–response relationship and it is consistent with others’ findings.

Where does this leave us? First, the study of Thelle et al teaches us a methodological lesson, demonstrating the value of analysing datasets which may have been collected for a different purpose. Second, the evidence linking intensive physical activity in men to risk of atrial fibrillation is now substantially stronger. It may be time to look more closely at potential mechanisms by which this may happen. But, most importantly, let us remember that atrial fibrillation is only one facet of health. Increasing levels of physical activity are clearly associated with better health and reduced mortality.11 It would be quite wrong to suggest that anyone should reduce his or her levels of physical activity. Stay active and if you are an endurance athlete, do not give up your place in next spring’s marathon.

Competing interests None.

Provenance and peer review Commissioned; internally peer reviewed.

To cite Marshall T. Heart Published Online First: [please include Day Month Year] doi:10.1136/heartjnl-2013-304541

REFERENCES

9 Williams PT, Franklin BA. Reduced incidence of cardiac arrhythmias in walkers and runners. PLoS One 2013;8:e55302.

Correspondence to Tom Marshall, Primary Care, School of Health and Population Sciences, University of Birmingham, Edgbaston, Birmingham, B15 2TT, UK; T.P.Marshall@bham.ac.uk