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Newly discovered atrial fibrillation: who(se) care(s)?

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This editorial refers to ‘Impact of cardiology follow-up care on treatment and outcomes of patients with new atrial fibrillation discharged from the emergency department’, by N.M. Hawkins *et al.*, on pages 695–103.

New-onset atrial fibrillation (AF) is associated with a significant mortality rate of 5–6% in the first year after the initial presentation.^{1–4} Mortality is higher in new-onset AF compared to previously known paroxysmal or persistent AF² or when AF is not the primary but secondary diagnosis.³ The fact that new-onset AF carries a higher mortality risk than established paroxysmal or persistent AF relates undoubtedly to as yet undiagnosed underlying cardiovascular diseases and so far less well managed AF.^{2,5} Therefore, new-onset AF patients deserve extensive diagnostic follow-up to rule out and treat actionable associated conditions. In this respect, it is noteworthy that in recent-onset AF as many as 30% of patients suffer AF recurrence during intermittent ambulatory rhythm monitoring in the very first month after the index visit, which may not only be an expression of aggressive intrinsic focal arrhythmogenicity but particularly also of an as yet undiagnosed evolving medical condition.⁶

Many associated conditions contribute to the relatively high mortality in new-onset AF including old age, heart failure, infection, stroke, respiratory disease, malignancy, myocardial infarction, major bleeding, as well as renal failure.³ Although early diagnostic or therapeutic interventions after initial presentation may improve outcome, many associated conditions—if found—are non-actionable. Notably, many of these conditions are not amenable and may even worsen by common oral anticoagulation.² On the other hand, if not for reducing mortality, targeted early intervention could prevent morbidity by reducing repeated visits to the hospital for stroke, heart failure, angina pectoris, or arrhythmia recurrences. Managing these concomitant conditions requires specialists’ input from cardiologists or internists.

With this in mind, Hawkins *et al.*⁷ performed a retrospective study in a comprehensive set of databases from the province of Alberta in Canada with robustly and prospectively collected data. They found that patients with a new primary diagnosis of AF discharged home from their emergency department visit suffered fewer deaths, strokes, and major bleeds during 1-year follow-up when managed under cardiology care compared to care provided by non-cardiologists. Additionally, under cardiology care more patients underwent electrophysiologic interventions and revascularizations, and were more often treated with beta-blockers, statins, and oral anticoagulation. The authors must be commended with their meticulously performed study, contributing to our understanding of the several processes leading to survival improvement. The study is in line with one previous study, also from Canada.⁴ Although retrospective, the data can be considered robust since they are based on established comprehensive databases with prospectively collected data using strong definitions of data points and methods of correction which are up-to-the-standard. Nevertheless, the study potentially suffers from referral bias. Although correction for probability of cardiology follow-up was performed in a sensitivity analysis with propensity matching, that does not rule out residual bias. Patients receiving cardiology follow-up were very much younger, with a higher median household income and urban residence. Especially age was a significant confounder with a proportion of 40% of patients in the non-specialist group being over 75 years vs. only less than one quarter in the group managed by cardiologists. Similarly, the composite scores for CHA₂DS₂-VASc and HAS-BLED were more favourable in the cardiologist treated patients.

The exact processes associated with survival benefit under cardiology care are difficult to ascertain causally. The absolute numbers of likely beneficial interventions were low (almost all well below 5%). The fact that the 1-year stroke rate was lower under cardiology care compared to non-specialist care (0.8 vs. 2.2%) may indeed relate to

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the higher use of oral anticoagulation in the former group. However, differences in use of anticoagulation in patients with a CHA₂DS₂-VASc score of 1 or more was relatively low in all groups and not extremely different between cardiologists and non-specialists (54 vs. 43%). It would have been interesting if the authors would have provided more insight into over- and under-treatment using appropriate definitions,^{5,8} or if they would have simply reported data on patients with CHA₂DS₂-VASc score 2 and higher in whom an almost 100% use of anticoagulation may be expected.

It is noteworthy that on average less sick patients are being referred to cardiology as if the referring physicians consider the cardiology service not fit for the more complex and co-morbid patients who frequently use multiple drugs. To combine the best of both worlds, integrated chronic care programs including physician-supervised nurse-led care could provide comprehensive care to patients with AF, even when older and harbouring several co-morbidities.

Should all patients with new-onset AF now be referred to a cardiologist? Considering the outcome of previous studies,^{4,7} and the fact that new-onset AF is associated with excess events partly attributable to cardiovascular causes responsive to typical cardiology care,² one might answer positively. Hawkins *et al.*⁷ find support for this notion in our previous work although all those patients were managed within cardiology, either subjected to nurse-led care supervised by a cardiologist or usual care by an unsupported cardiologist. The answer is yes and no. Yes, because relevant cardiology-based care may improve quality of life and prognosis. No, because that care cannot be provided by cardiology specialists alone since the numbers of patients are too large for that and ever increasing due to modern AF detection methods.⁹ In addition, previous studies show that such care can be delivered effectively in a collaborative model of nurse-led care either under specialist^{5,8} or general practitioner supervision (Van Den Dries *et al.*¹⁰ ALL-IN trial. Presented at ESC Paris, 2019), thus mitigating the need for specialists. Apart from the latter advantage, nurse-led care models ascertain a significantly better guidelines-based care delivery.^{5,11} In this respect, it is interesting to note that in the recent studies from Canada hospitalization were either unaffected⁷ or even increased⁴ under cardiology care compared to non-specialist care whilst under nurse-led cardiology supervised care hospitalizations for cardiovascular events, in particular arrhythmia-related events, are

decreased.^{5,8} Considering the growing numbers of patients with AF at an ever-increasing age, integrated care models become inevitable to warrant cost-effective and broadly accessible care. The question now is not so much whether cardiologists should attend these patients but instead, we should implement hospital-independent integrated chronic AF care, providing general care when possible and ensuring care by cardiologists or internists only when needed.

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