Comprehensive upstream treatment for atrial fibrillation, when and how?

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This editorial refers to ‘The Registry of the German Competence NETwork on Atrial Fibrillation: patient characteristics and initial management’ by M. Nabauer et al., on page 423

Evidence-based medicine is the gold standard for health care professionals worldwide. The dynamic field of atrial fibrillation (AF) research has provided a vast amount of literature. In order to summarize research findings and facilitate their translation into daily practice, the American College of Cardiology and American Heart Association (ACC–AHA) Task Force on Practice Guidelines and the European Society of Cardiology (ESC) Committee for Practice Guidelines and Policy Conferences published the first international guideline on the management of AF patients.1 Nabauer et al.2 studied adherence to the maiden version of this guideline using a large German cohort of AF patients. First of all, the authors should be commended on initiating and establishing AFNET as well as achieving the enrolment of such a large number of patients. The participation of all strata of the German health care system as well as the careful study outline allows representative analyses of the management of AF patients in Germany. In this respect, a most interesting question to be answered from this registry will be whether differences exist in guidelines adherence among office-based and hospital-based caregivers. As an example, in the Netherlands, cardiologists rather than family physicians or internists appear to initiate oral anticoagulation for AF.3 That study could not answer the question whether that was associated with delayed protection and an increased stroke rate. Whether similar differences exist in the German system and if this affects outcome remains to be seen. As a start, there is a remarkable difference in the number of AFNET patients contributed from the various caregivers with fewest from office-based specialists. If this difference reflects a generally lower propensity to record patient data among office-based specialists, one may wonder how that translates in daily quality of care. It is uncertain whether unwillingness of non-participants played a role or that it was the purpose of AFNET to limit enrolment of office-based patients.

Once more the 3P classification of AF, initially proposed by John Camm, is needlessly challenged by the authors.4 The AFNET data nicely show that the designation of type of AF may change, and that is not a disadvantage of the system like the investigators claim. It should change since the disease and the options to treat AF change. The classification was never meant to provide a static, for ever diagnosis of the type of AF. Although everyone accepts that AF may progress from paroxysmal to permanent AF, it must also be clear that the reverse may happen since symptoms or management options change. In other words, the fact that patients move from one category to the other is ‘clinically natural’ and should not be viewed as a shortcoming of the classification system. The strong point of the 3P classification is that it triggers attending physicians to think about management options since those differ between the three types. It will be interesting to see how in AFNET the distribution of clinical AF types as well as the AF progression is after 5 years follow-up, particularly keeping in mind the evolution of catheter-based approaches.

Fortunately, the current cross-sectional AFNET data corroborate existing survey data in many ways.5,6 Assessment of the determinants of the use of echocardiography may, however, provide new insights (as yet not reported). There is, however, uncertainty concerning the definition of appropriate application of echocardiography. The current 3 months definition overemphasizes under-application since any echo performed in the past may be appropriate practice considering that follow-up studies are not mandatory for every 3 months in stable patients. Nevertheless, this does not explain the frequent use of transthoracic echocardiography in permanent AF and one wonders whether installing the registry itself served as a trigger.

The relatively high prevalence of appropriate anti-thrombotic treatment in the period 2004–06 as seen in the AFNET registry suggests—as the authors indicate—an effect of the 2001 AF guidelines. However, this effect should not be exaggerated. Performing a registry alone may enhance appropriate treatment. Also, compared with guidelines, registries or hotline presentations may have a much higher impact. As an example, almost immediately after
the rhythm vs. rate control trials, RACE and AFFIRM were preliminarily presented the number of patients included in a cardioversion trial driven by the pharmaceutical industry fell dramatically from around 23 to 9 per month (personal data of H.J.C.), indicating that one well-staged presentation of two pivotal trials at one international hotline meeting may change the practice virtually on the spot. Nonetheless, guidelines are extremely important to establish standards of care which is sooner or later important to measure the quality of care given by cardiologists around the world.

The AFNET data corroborate previous data showing lack of tailoring of oral anticoagulation to stroke risk, as well as overtreatment.6 Indeed, the decision to anticoagulate does not depend on stroke risk alone. Patient preference, availability of an anticoagulation clinic, and co-morbidities play a role. These largely hidden reasons need further study and hopefully we will see these analyses in the future. Overtreatment represents avoidable patient inconvenience but is not a large problem in terms of bleeding—like the authors suggest—since stroke risk and bleeding risk go hand-in-hand. Overtreatment may, however, mark lack of understanding of stroke risk factors. Benchmark analyses within the AFNET data may reveal such mechanisms.

The old clinical paradigm that paroxysmal AF patients do not necessarily need anticoagulation7 does also seem to hold in Germany since in AFNET paroxysmal AF patients received far less frequently oral anticoagulation than the other AF types, despite a similar risk profile. Clinicians need to realize that type of AF is not on the list of well-known stroke risk factors. In an attempt to enhance risk assessment in daily practice, the 2006 ACC/AHA/ESC guidelines on AF proposed the CHADS2 scoring system as a first step.8 Subsequently, since this scheme is extremely easy to use, the follow-up data of AFNET may show increased appropriate use of oral anticoagulation over time.

Rhythm control was applied in a substantial number of asymptomatic patients. Although the numbers are in line with results from the Euro Heart Survey on AF9, the magnitude of the implication that symptoms are ignored as treatment stratifier seems to be flawed, because it is uncertain whether previously symptomatic patients who became asymptomatic under rhythm control were separately counted or not.

The fact that paroxysmal AF patients were more symptomatic due to palpitations may indicate a lack of ‘umbrella’ rate control drugs in paroxysmal AF, which is conveyed by the baseline data. If attack rate is low this is logical, but in patients with a higher frequency of attacks it may become worthwhile to add rate control drugs on a chronic basis. In this respect, it is noteworthy that the use of the combined rate/rhythm control drugs sotalol and amiodarone seems low in this registry compared with the Euro Heart Survey. It is gratifying to see that Vaughn Williams class IC drugs were frequently combined with rate slowing drugs. On the other hand, amiodarone was—unexpectedly often—combined with β-blockade in over 60% of cases which may provoke excessive bradycardia and avoidable pacemaker implantations. The future will tell. Suffice to say that drugs that combine rhythm and rate control effects are very useful, and in this respect dronedarone may become a new option.9

The AFNET data confirm that AF is very frequently associated with hypertension. Conversely, only a small proportion of patients have seemingly ‘lone AF’. Seemingly, since at present unrecognized heart disease may emerge at a later stage, and AFNET’s design provides an excellent opportunity to examine the course of lone AF. Around 70% of patients suffer from hypertension vs. 50% in the general German population. Obviously, the severity, type, and duration of hypertension may be less favourable in AFNET patients explaining their susceptibility to develop AF. In addition to that they may harbour more extensive associated cardiovascular disease. A comparison of populations will be challenging, yet further analysis of the AFNET data may reveal excessively long previous duration of hypertension or a high prevalence of concomitant conditions among hypertension patients. At the end of the day, AFNET might generate diagnostic algorithms to predict ‘arrhythmogenic’ hypertension.

Because of the frequent association with cardiovascular diseases, the AFNET investigators state that comprehensive upstream treatment is needed in most AF patients if the goal is to halt the arrhythmia and its consequences. The gaps between guidelines and practice, not only for anticoagulation2,5,6 but also for AF patients with heart failure10 may call for implementing nurse-driven integrated chronic care programmes to enhance our comprehensiveness of care for multifaceted AF patients. After all, follow-up data from this large registry may reveal an impact of ‘comprehensive’ treatment including upstream therapy, anticoagulation, and rhythm management, even without such integrated care programmes and even in the absence of randomization since the number of patients included in AFNET is large.

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References

Placement of an ICD lead through a small innominate vein identified by a selective retrograde venogram in a case with a persistent left superior vena cava

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A 19-year-old woman with idiopathic dilated cardiomyopathy underwent an implantation of an implantable cardioverter defibrillator (ICD) due to ventricular tachycardia with syncope. During the procedure, a persistent left superior vena cava (PLSVC) was found (Panel A). Innominate veins bridging the two superior vena cava are found in 45–68% of cases with a PLSVC. A small innominate vein that had not been detected by an antegrade venogram of the PLSVC (Panel A) was also clearly demonstrated by a retrograde venogram (Panel B).

An atrial lead was introduced through the PLSVC from the left axial vein and placed on the right atrial free wall. Then, a dual-coil ICD lead was introduced through the small innominate vein from the left cephalic vein by a cut-down approach using a 7-Fr peel-away introducer and was then anchored to the right ventricular apex. The resulting defibrillation threshold was 5 J with the use of dual coils in the right ventricle and small innominate vein (Panels C and D).

Compared with a ventricular ICD lead positioned through the PLSVC, the placement of the proximal coil in the innominate vein was better for obtaining a low defibrillation threshold and, moreover, made the anchoring of the ICD lead in the right ventricular apex through the innominate vein technically much easier. The small innominate vein was probably functionally collapsed. Therefore, we confirmed the existence of a small innominate vein by the retrograde venogram. The retrograde venogram was useful for delineating such a small innominate vein that was not visible by the antegrade venogram of the PLSVC.