LETTERS TO THE EDITOR

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Atrial fibrillation ablation: beyond electro-mechanical matters

Since atrial fibrillation is the most frequent arrhythmia in the western world (with a predictable increase in the future, due to aging), treatment strategy has gained outstanding interest also for social and economic implications.1

Recently, Sacher et al.2 focused on endocrine and mechanical implications of sinus rhythm (SR) restoration after radiofrequency ablation (RFA). The SR was associated with decrease in ANP and BNP coupled with an improvement in mechanical cardiac function in patients with and without impaired left ventricular ejection fraction (LVEF) after RFA.

However, some observations are needed: (i) ANP and BNP concentrations drop the day after RFA despite volume overload (due to the use of irrigated catheters as evidenced by a significant weight increase) with a subsequent raise on Day 3 followed by a lesser decrease at the 3 month assay. Considering the slow pace of atrial reverse remodelling after SR restoration and the more pronounced decrease of ANP with respect to BNP on Day 1, it could be argued that the use of extensive RFA may induce a kind of ‘atrial endocrine stunning’ which overcome and anticipate the following modification induced by SR; (ii) to date, rhythm control strategy is not proved to be more effective in improving prognosis.3,4 In particular in early onset AF, since the ease in restoration of SR could be related with easy-to-treat AF and/or less severe associated cardiovascular disease. Altogether these data suggest to limit more aggressive strategies for difficult-to-treat AF, despite enrolment criterion in Sacher’s study in which AF onset widely ranged from 1 month to 6 years; (iii) Sacher’s study suggests that catheter ablation for AF is successful in the majority of patients and associated with substantial improvements in LV function; anyway, the difficulties that exist when assessing LV function in patients with AF should be taken into account.

Whether AF is a cause or consequence of heart failure is a hard topic: the contribution of AF to left ventricular dysfunction is difficult to evaluate in an individual patient particularly when both co-exist in the initial presentation. The spectrum of relationship between AF and HF is wide, ranging from cases of left ventricular dysfunction as a direct result of AF (i.e. true tachycardio-myopathy) to cases where no relationship exists at all, with many intermediate cases where a primary form of left ventricular dysfunction coexists with a secondary component provoked by a concealed or occult tachycardio-myopathy.8

In this view, definition of the specific role of AF in the single patient and quantification of the chance of SR maintenance may help tailor the treatment of AF, which in many subjects may entail even aggressive strategies for rhythm control if these could retard the progression of the associated cardiovascular disease and possibly affect long-term prognosis.

Choice of AF treatment is not a straightforward therapy but a complex approach firstly based on the broad baseline clinical picture that has to be refined according to patient’s response and to the evolving clinical characteristics: further insights into the complex interplay between AF and HF are crucial for the progress of optimal therapeutic strategy.

References


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there is no longer evidence of atrial endocrine the ANP level was normal in the vast majority months, despite extensive RF application, acute atrial endocrine stunning was previously damage caused by radiofrequency (RF). An however, in our study, it reverses within 3 days with concomitant elimination of fluid overload. But the most interesting point is that at 3 months, despite extensive RF application, the ANP level was normal in the vast majority of patients being in sinus rhythm, meaning that there is no longer evidence of atrial endocrine injury at 3 months.

We also agree that LV function is very difficult to assess in AF and that is the reason why LV dimensions were measured in sinus rhythm just after ablation (Table 2).

We also agree that rhythm control strategy has not been proved to be more effective than rate control, but all studies cited by Dr Martignani et al. involved anti-arrhythmic drugs and not catheter ablation. Moreover, the percentage of patients with effective sinus rhythm in the rhythm control group was not so different from the rate control group in these studies (63% vs. 35% in AFFIRM), and the maintenance of sinus rhythm was associated with a decreased risk of death (HR = 0.53).

Concerning the indication of persistent and permanent AF ablation, the aim of our study was not to promote AF ablation in all patients with persistent/permanent AF. Ablation in this population is a long procedure with a potential risk of complications and requires experienced centres. Those relatively young patients (53 ± 12 years) included in our study were referred for catheter ablation because they were highly symptomatic [asthenia, dyspnoea, and 12% had left ventricular ejection fraction (LVEF) <50%]. At the present time, there is no doubt that catheter ablation of persistent/permanent AF ablation should not be performed in asymptomatic patients without LVEF alteration.

Concerning the complex interaction between AF and impaired LVEF, the patient's history is crucial. In cases where AF occurs following the onset of heart failure (HF) without a change in the LVEF, it is unlikely that AF is contributing to the HF. Conversely, some patients with established HF demonstrate further impairment of LVEF following the occurrence of AF and these patients may well benefit from catheter ablation. Rate is not the only factor in these patients as an improvement in LVEF may be seen even in cases of good rate control.

In most cases, we agree that it is difficult to assess the impact of AF. However, recent studies have consistently showed a very significant improvement in LV function following AF ablation, suggesting that the deleterious impact of AF has been largely underestimated in the past, when drugs or ‘ablative and pace’ were the only available strategies.

To conclude, the strategy to treat patients with persistent/permanent AF has to be tailored to every single patient. The patients must be extremely well informed in this decision process.

References