devices are commercially available to allow out-of-hospital monitoring of the analogue ECG-signal for up to 96 continuous hours. Subsequent analysis to identify arrhythmic episodes as short as 30 s requires adequate attention and resources. Continuous recording might help to better detect asymptomatic episodes as compared to discontinued recordings – e.g. triggered by occurrences of symptoms or at fixed time points during the day – which methodology often suffers from low patient compliance adhering to the protocol. Implantable devices assure 100% patient compliance, yet available devices are rather expensive. External devices, such as the AF-Alarm, allow for easy application and fast diagnosis of relevant ECG information while offering a good cost/efficacy balance and assuring high patient compliance.

The outcome of this observational study confirms that continuous observations is a good tool to document the absence/presence of asymptomatic episodes which will trigger subsequent medication adjustments. In this particular study, one patient was even diagnosed to have a non-sustained ventricular tachycardia during the extended period of ECG registration.

4.1. Limitations and shortcomings

It has been suggested to take a blanking or stabilization period into account of some three months post-ablation prior to assessing the recurrence of arrhythmias. In this stabilization period, the rate of recurrences might gradually decay and is not representative for the final clinical outcome, yet documentation of recurrences might help to better understand the remodeling process that is ongoing. Unfortunately today, too limited observations allow for such an adequate understanding.

If patients would have been monitored in the current study for longer time periods, there is a likelihood that more patients would have demonstrated recurrences. Longer registration periods merely depend on the tolerance of the patient to wear the sticky electrodes longer. This study was applied in only 33 patients, representing only a small sample of the current population presenting itself in the outpatient clinic. Therefore, observed ablation success rates are only indicative.

5. Conclusion

This study demonstrates that the longer the observational period the lower the success rate post-surgical ablation for AF. Furthermore, the current observed results demonstrate that the use of an external cardiac rhythm monitoring device like AF-Alarm is feasible to support the diagnosis of atrial arrhythmic recurrences in a better way than current standard practice. AF-burden is a continuous measure and a better parameter to assess success of the ablation therapy. Assessment of the AF-burden at regular time intervals allows optimal titration of the anti-arrhythmic and anti-coagulant therapies. In the future, implantable loop recorders may offer an objective mean to document occurrences of atrial episodes while the patient is out of the hospital and no longer under direct control of the treating physician. Thus, demonstration of long-term absence of recurrences seems to be the most solid end-point to determine success of the initial ablation procedure.

References


eComment: Monitoring of atrial fibrillation burden after surgical ablation

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During the last decade, catheter and surgical ablation of atrial fibrillation (AF) has evolved from an experimental method to a procedure that is now commonly performed throughout the world. Recurrent AF after ablation occurs in up to 50% of patients and could be in a form of short periods of AF or persistent AF with less or without symptoms. This is of significant relevance as most of these episodes are not recognized and can lead to thromboembolic events. And evaluation of the long-term efficacy of the ablation is still one of the unresolved questions which investigators are facing.

In this article, Beukema et al. demonstrated the additional value of a new external cardiac rhythm monitoring device (AF-Alarm) in 33 patients with paroxysmal AF who underwent surgical radiofrequency ablation [1]. Studies have shown that the more intensively the patient is monitored and the longer the period of the monitoring, the greater the likelihood of detecting both symptomatic and asymptomatic AF [2]. For this reason, it is very important to find an objective method to determine AF burden. In most cases routine electrocardiogram (ECG) and 24-h Holter monitoring are the standard strategies used by investigators. Implantable loop recorders are also available now to monitor symptomatic and asymptomatic episodes of AF and possess up to three years longevity of monitoring [3]. The first data on the RevealXT performance trial (XPECT) study, presented by Professor Hindricks at the Heart Rhythm Society Congress 2009, showed that RevealXT is not only sensitive for the detection of AF.
episodes, but also accurate for the measurement of AF burden and highly reliable for the exclusion of the presence of AF. The drawback is that implantable devices are rather expensive and require additional intervention. In this case continuous search of external devices providing long-term monitoring of ECG and offering optimal cost-effectiveness balance is one of the main interests of the clinicians.

References

