mean PreVAB = 29ms±7ms. In 100% of cases, the automatic PreVAB would have prevented all R wave oversensing in the recorded data sets.
Conclusions: An automatic algorithm to set PreVAB using this method appears feasible. Long term human testing should be performed to further demonstrate efficacy of this approach.

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Continuous monitoring of the native atrio-ventricular conduction in a dual chamber device

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AAIsafeR is a new pacing mode allowing true AAI functioning as long as no AV block occurs. It is associated with dedicated diagnosis for the description of the native atrio-ventricular conduction (AVC) and AV block occurrences. This sub-analysis of the SAVE-R multicenter study evaluates the usefulness of those diagnosis in a population of sinus dysfunction patients (pt).
Methods: after implant, all pt are programmed in AAIsafeR. Pacemaker memories are retrieved 1 month after implant. Histograms of AVC delays at different heart rate and 24h curve of AVC along with pacing statistics were analyzed.
Results: 28 pts (10 male and 18 female, 76 ± 9 years) were included. 5 pt were excluded because the rate response was off although pt had chronotropic incompetence. The mean percentage of pacing was 56 ± 36 for the atria and 0 for the ventricle thanks to the AAIsafeR mode programmed. 13 pt were in sinus rhythm (SR pt) and 10 pt were mostly paced in the atria (P pt). In SR pt, the mean intracardiac measure of PR at rest was 207 ± 44 ms. In P pt, the mean AR (A paced – R delay) at rest was 271 ± 44 ms. The AVC hysteresis (AR – PR) at rest could be measured in 22/23 pt, mean value being 61 ± 26 ms. In 17/23 pt, a nychthemeral variation of the AVC was observed.
The mean lengthening of the AVC between day and night was 25 ± 13 ms with no difference between the 2 groups. An adaptation of the AVC to exercise was observed in all SR pt. The mean shortening of the PR was 47 ± 17 ms. The maximum rate, above which no more shortening was observed, was 120 ± 26 cpm, 85 ± 17% of the age dependent maximum rate (AMR). Only 3/10 pt of the P pt group showed an adaptation of the AVC to exercise. The shortening observed (18 ± 9 ms) and the maximum rate allowing shortening (53 ± 11% of the AMR) were lower than in the SR pt.
Conclusions: this sub-analysis confirmed already known values like the mean AV delay hysteresis usually programmed in a standard DDD mode. It also emphasizes the lack of AVC adaptation to exercise of chronotropic incompetent pt, paced with the rate response of the device, although those pt have no AVC disturbances.

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Permanent transfemoral pacemaker: a single-centre series performed with an easier and safer surgical technique

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When venous access via the upper venous tree is not possible, the usual approach is to proceed to epicardial lead placement. This report presents a series of permanent pacemaker implants utilizing the right femoral vein for venous access. A modification of the previously reported surgical technique was used, using needle access of the femoral vein 3-4 centimetres below the groin crease, and creating the pocket in the anterior aspect of the right thigh, with a mean implanting time of 52 minutes. Twelve permanent femoral systems were consecutively implanted between May-01 and October-04. Five were DR systems and seven were VVIR. All the leads implanted were active fixation. There were no acute nor chronic complications, with a mean follow-up of 18 months.
A Doppler ultrasound study of the inferior vena cava and tributary veins was performed on eight of our patients, at least 6 months after the implant date. There was no evidence for acute or chronic venous thrombosis of the lower part of the body venous tree, proximal to the leads insertion. Venous obstruction was identified distal to the implant site in one patient. Only two of our patients needed long term anticoagulation, because of chronic atrial fibrillation, and only one of them underwent the ultrasound study.
In conclusion, we believe that the permanent femoral implant utilizing the technical modification described in this paper is easy to perform, safe, and a better option than epicardial lead placement when the usual upper venous tree access is not available.

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AAISAFER 2: a unique diagnosis tool

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AAIsafeR 2 is a new pacing mode, designed to switch from AAI to DDD in case of unexpected atrio-ventricular block (AVB) in Sinus Node Disease (SND) patients (pts). This pacing mode may also have a significant additional value in diagnosing pacemaker (PM) dysfunction. We report our preliminary experience with regards to these two objectives.
Methods: AAIsafeR 2 has been evaluated in 43 pts (29 males, 74±9 years) implanted with a Symphony DR 2550 PM (ELA Medical, France). Indications were pure SND (n=20), paroxysmal AVB (n=15), both (n=7) and 1 Long-QT (n=1). A 24-hour Holter recording was obtained after pacemaker implantation in 35/43 pts. PM statistics and EGM stored on AVB were retrieved at 24-hour and 1 month follow-up in 35/43 pts.
Results: among 17/20 pts implanted for pure SND, 12 experienced switches from AAI to DDD (1-239; mean: 74; median: 31). The criteria for switching were: "AVB III" (n=1), various AVB patterns (n=6), ventricular pause (n=1), various AVB patterns and ventricular pause (n=4). The circadian distribution of those events was 13% nocturnal (22:00-08:00).
The following table presents the respective performances of 24-hour Holter recording and PM programmed in AAIsafeR to identify PM system dysfunction (in number of pts.). These data confer to both Holter recordings and PM programmed in AAIsafeR a sensitivity of 86% and a negative predictive value of 96% for detection of PM dysfunction.

Performances

Documentation means	Loss of A capture	A oversensing	A undersensing	V undersensing	All
Holter	1	0	0	0	1
AAIsafeR 2	0	1	0	0	1
Both	1	0	4	1	6
Holter and AAIsafeR 2	2	1	4	1	8

Conclusions: a significant percentage of pure SND pts presents unexpected AVB (70%), as documented by AAIsafeR. In our small population, PM programmed in AAIsafeR was as efficient as Holter monitoring to detect PM dysfunction.