scale (mean [standard deviation] score 67.1 [18.4] vs 63.2 [18.9], p<0.001), single index utility score (median 0.78 vs 0.73, p<0.001), or the five dimensions of well-being (p<0.001 for each). Irrespective of AF control, cardiovascular events leading to hospitalization had occurred in 28.1% of patients.

Interpretation AF control is not optimal. AF patients experience frequent symptoms, functional impairment, altered QoL, and cardiovascular events, even when AF is controlled. This highlights the need for improved treatment of AF.

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Atrial flutter-related tachycardiomyopathy. Prevalence and predisposing factors

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Tachycardiomyopathy is a rare and treatable cause of heart failure. The purpose of the study was to determine the prevalence and the factors of atrial flutter (AF) – related tachycardiomyopathy.

**Methods:** 859 patients aged from 18 to 93 years (64±11) were consecutively referred for radiofrequency ablation of AFL between January 1995 and March 2010. Patients admitted with heart failure and low left ventricular ejection fraction (LVEF) (<40%) were collected. Patients with normalisation of LVEF 6 months after AF ablation and considered as having an AF-related tachycardiomyopathy were studied.

**Results:** AF-related tachycardiomyopathy was noted in 46 patients (group I); its prevalence was 5%. 812 patients had no AF-related tachycardiomyopathy (group II). Group I (62±12 years) tended to be younger than group II (64±11.5) (p<0.06). Male gender tended (p 0.06) to be more frequent in group I (99%) than in group II (73%). Heart disease (HD) was present in 5 group I patients (11%) (hypertension (HT) 3, valvular HD 1, respiratory failure with right ventricular (RV) involvement 1) and in 460 group II patients (57%) (valvular HD 86, ischemic HD 112, HT and metabolic syndrome 98, respiratory failure with RV involvement 64, previous dilated cardiomyopathy 38, various HD’s 30, congenital HD 32). The differences were highly significant (p<0.00001). The prevalence of AFL with 1:1 AV conduction related to a good AV conduction did not differ significantly in group I (9%) and II (6%). AFL duration was unknown because the date of beginning cannot be determined especially in group I patients.

**Conclusions:** The prevalence of atrial flutter-related tachycardiomyopathy was low (5%) in a population admitted for atrial flutter. The prevention seems difficult, because patients prone to AF-tachycardiomyopathy are relatively young men without known heart disease and without the feeling of tachycardia.

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Slower basal heart rate and shorter corrected QT intervals in patients with lone atrial fibrillation. Markers of an underlying genetic background?

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**Introduction:** Gain-of-function mutations in genes coding for potassium channels were reported in familial atrial fibrillation (AFib). Similar mutations were also described in families with short QT syndrome (SQT), an entity often associated to AFib.

**Aims:** We hypothesized that lone AFib is a minor form of SQT. We sought to compare the QT intervals of patients with lone atrial fibrillation to QT intervals of an aged and sex matched normal population.

**Methods:** Heart rate, QT end and QT apex were measured during sinus rhythm in each of the 12 ECG leads in 66 untreated patients with paroxysmal lone AFib and in 122 apparited control subjects. Tp-Te was calculated by the difference between QT end and QT apex.

**Results:** Mean age was 49±13 yo. 72% were men. Basal resting cardiac rate was slower in patients with lone AFib than in controls (64±10 vs 69±9 bpm, p=0.00006). Corrected QT end intervals were found shorter in most ECG leads in patients with lone AFib than in controls (significant for 7/12 ECG leads and borderline in 2 other leads) (mean QTc: 381±21 vs 388±22 ms, p=0.02). There was no significant differences in corrected QT apex, while corrected Tp-Te were significantly shorter in AFib patients in most ECG leads (mean corrected Tp-Te: 67±9 vs 77±10 ms, p<0.00001).

**Conclusion:** QT interval is significantly shorter and heart rate slower in patients with idiopathic atrial fibrillation compared to the normal population. This could be the marker of genetic mutations of cardiac ionic currents predisposing to atrial fibrillation.

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Efficacy and safety of pulmonary veins isolation by cryoaablotion for the treatment of paroxysmal and persistent atrial fibrillation in 259 patients

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We examined the efficacy and safety of pulmonary vein (PV) isolation by cryoballoon.

**Methods:** We studied 259 patients with paroxysmal (n=207) or persistent (n=52) atrial fibrillation (AF), who underwent isolation of 994 PV with a cryoballoon. They were followed every 3 months with a 48-h Holter. We analyzed the immediate and long-term procedural and clinical outcomes.

**Results:** We isolated 882 of 844 PV (88.7%) after one procedure. Mean age was 56±10.65 years and sex-ratio was 0.26 (54/207). 25 patients (9.6%) presented with common left pulmonary vein trunk (CLPVT) in 73 patients (28.1%), an irrigated-tip radiofrequency (RF) catheter was used to create a supplemental focal lesion. It was more frequently used for persistent AF (p=0.001) and for CLPVT (p=0.001). Mean duration cryoballoon application was 567 seconds (s) in left superior pulmonary vein (LSPV), 564 s in left inferior pulmonary vein (LIPV), 531 s in right superior pulmonary vein (RSPV) and 548 s in right inferior pulmonary vein (RIPV). Mean temperature was −52°C in LSPV, −51°C in LIPV, −50°C in RSPV and −49°C in RIPV. We used a 28 mm balloon in 60.8% of cases, a 23 mm balloon in 19.6% and both in 14.6%. The mean procedural duration was 143.55±38.8 min (70-275) and fluoroscopic exposure 28.4±13.4 min (9-73). At the end of the procedure, 228 patients (87.7%) were in sinus rhythm. Over a mean period of 15.25±10 months (range of 3-38), 79.6% of patients had remained recurrence-free with no significant difference between paroxysmal and persistent AF (p=0.226), and also between CLPVT and usual anatomy of PV (p=0.266). 23 patients had a second procedure. Phrenic nerve palsy was the most frequent, though reversible complication.

**Conclusions:** PV isolation, using a cryoballoon, was completed with a high rate of procedural and long-term success and low rate of complications. Supplemented, when needed, by focal RF, cryoaablation was a safe and effective alternative to a circumferential RF procedure.

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Cardiac resynchronization therapy plus coupled pacing improves myocardial function in heart failure patients

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**Aims:** Coupled pacing (CP) which consists in an additional beat delivered after the refractory period, has been proposed to reduce ventricular rate and increase ventricular contractility. We hypothesized that CP may be added to