A03-5 CARDIAC RESYNCHRONISATION THERAPY ALLOWS MEDICAL THERAPY OPTIMIZATION IN PATIENTS WITH ADVANCED CONGESTIVE HEART FAILURE? RESULTS OF THE INSYNC/INSYDICAL ITALIAN REGISTRIES

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Background: Patient (pts) with advanced CHF are generally treated with a polypharmacy medication and they do not tolerate these drugs at effective doses. Cardiac resynchronization therapy (CRT) by biventricular pacing has been proposed as an adjunct to medical therapy to improve cardiac function and symptoms in CHF pts.

Objectives: To verify whether medical therapy optimization is possible after CRT in these CHF pts population.

Methods: Medical therapy before and after CRT was compared in 382 pts enrolled into INSYN/INSYDICAL ICD Italian registry (mean age 68±13.1 yrs, 21.2% females). Etiology was idiopathic in 129 (33.6%), ischemic in 145 (38.0%) and other in 110 (28.2%). Baseline NYHA class was 3.05±0.55, QRS 167.5±38.5 ms, LVEF 26±8%, IVED9 69.8±8.8 mm. Baseline medication was composed by a mean of 4.52±1.99 different drugs per pt; 276 (72.3%) were on ACE-inhibitors or ARB (mean Captopril dose: 74.6±49.6 mg/die; Enalapril: 19.1±11.0 mg/die); 131 (34.34) were on beta-blockers (carvedilol: 14.6±11.5 mg/die); 321 (84%) were on diuretics (furosemide: 108.8±117.8 mg/die).

Results: At 9.4±8.1 months follow-up, number of drugs taken per pt decreased significantly (3.5±2.26 drugs/p, p<0.001), as the proportion of pts on ACE-I or ARB (63.1%, p<0.001), while the average doses of these drugs remained similar. On the contrary, pts on beta-blockers slightly increased (35.6%, p<0.01) and average carvedilol daily dose increased significantly (22.5±17.1 mg, p<0.005). Moreover, pts on diuretic therapy significantly decreased to 72.8% (p<0.001), and furosemide daily dose decreased but not significantly (100.4±113.5 mg, p>0.1).

Conclusions: Advanced CHF pts treated with a polypharmacy medication, CRT contributes to further therapy optimization. The increase of the average carvedilol daily doses and the withdrawal of diuretics, as well as the decreased average of number of drugs per patient, may have favourable prognostic implications.

A03-6 UPGRADEING FROM RV PACING TO BIVENTRICULAR PACING IN PREVIOUSLY PACED PATIENTS WITH ADVANCED HEART FAILURE: RESULTS OF A CONTROLLER STUDY

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Biventricular pacing (Biv) improves symptoms and exercise tolerance in non-paced patients with advanced heart failure (HF), intravenous conduction delay and LV systolic dysfunction. The RD-CHF study is a randomized single-blinded cross-over trial aimed to assess the clinical effect of upgrading from RV pacing to biventricular pacing in HF patients (NYHA class III or IV) with LV systolic dysfunction and electromechanical dysynchrony (aortic pre-ejection delay > 180 ms or intraventricular delay > 40 ms). Pts were randomized in two groups for two 3-months cross-over periods: RV followed by Biv in one arm, or Biv followed by RV in the other arm. Arhythmias assessment was performed at the end of the 2 cross-over phases using the Automatic Interpretation for Diagnostic Assistance (AIDA) algorithm included in the biventricular pacemaker.

Results: 44 pts were randomized (73±8 years; LV EF 25±9%). 21 pts were in sinus rhythm and 23 in permanent atrial fibrillation. Baseline characteristics and results in the two pacing modes are shown in the table below.

<table>
<thead>
<tr>
<th></th>
<th>Baseline</th>
<th>RV pacing</th>
<th>Biv pacing</th>
<th>ABIV(RV/R%)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>NYHA</td>
<td>3.22±0.4</td>
<td>2.61±0.7</td>
<td>2.10±0.5</td>
<td>-18</td>
<td>0.002</td>
</tr>
<tr>
<td>6WT</td>
<td>276.1±127</td>
<td>324.1±149</td>
<td>365.1±99</td>
<td>+19</td>
<td>0.002</td>
</tr>
<tr>
<td>QOL</td>
<td>0.1±0.2</td>
<td>0.4±0.2</td>
<td>0.2±0.2</td>
<td>20</td>
<td>0.001</td>
</tr>
</tbody>
</table>

During the follow-up, 6 patients died, including 2 from HF (1RV, 1Biv), and 2 from sudden cardiac deaths (Biv). No significant difference in ventricular arrhythmias were observed between the 2 groups. During the 3rd cross-over phase, 21 pts were rehospitalized, 8% in RV and 19% in Biv. Rehospitalization was related to HF in 8 pts, 7 in RV and 1 in Biv (p=0.01).

Conclusion: The RD-CHF study shows that in previously paced CHF pts with poor LV function, upgrading from RV to biventricular pacing significantly improves symptoms and exercise tolerance and decreases the hospitalization rate.

A04. SYNCOPE: MECHANISMS AND PREPACITATING FACTORS

A04-1 MYOCARDIAL ADRENERGIC INNERRATION IN PATIENTS WITH UNEXPLAINED SYNCOPE

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Objectives: Cardiac scintigraphy with 123I-Meta-iodobenzylguanidine (123I-MIBG) is used to evaluate myocardial adrenergic activity in patients with syncope of unknown etiology.

Methods: We studied 25 patients (aged 38±19 years, 15 men) with a history of syncopal episodes (>2 during the last 6 months) and a negative clinical and laboratory work-up (Group A), while a group of 20 healthy volunteers, with no history of syncope, served as controls (Group B). None of the participants had any disease that may have affected myocardial adrenergic innervation. Both groups underwent a planar and a single-photon emission computed tomography (SPECT) myocardial imaging of the heart after intravenous injection of 2mCi 123I-MIBG. Heart to mediastinum ratio (H/M) was used for quantitative assessment of adrenergic innervation, 10 minutes and 4 hours after drug infusion.

Results: The H/M ratio at 10 min and 4 hours in Group A was 1.83±0.11 and 1.80±0.19 respectively; significantly lower than Group B (2.09±0.11 and 2.06±0.10 respectively, p<0.05 for both). During SPECT scintigraphy, 20 patients of Group A (80%) showed regional disturbances in myocardial adrenergic activity in inferior wall and 4 patients (16%) in the anterior wall. No regional disturbances were detected in Group B.

Conclusions: A large percentage of patients with unexplained syncope have myocardial adrenergic innervation abnormalities of the left ventricle. The precise contribution of our findings to the elucidation of the pathophysiology of unexplained syncope requires further investigation.

A04-2 CARDIOVASCULAR AUTONOMIC REGULATIONS IN PATIENTS WITH RECURRENT VASOVAGAL SYNCOPE AND POSITIVE HEAD-UPRIGHT TILT TABLE TEST

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Purpose: The mechanisms leading to vasovagal syncope (VVS) are still unclear. Recent study demonstrated that subjects with prolonged latency within baroreflex loop are prone to nitroglycerine-induced syncope in supine position. We investigated whether delayed baroreflex response occurs also in subjects with recurrent VVS.

Methods: The study compared cardiac autonomic regulations in 20 patients (13 women, aged 39.5±13.7 years) with recurrent VVS and positive tilt test with 20 sex and age-matched healthy controls. Each subject underwent recording of ECG and continuous finger arterial pressure (Finapres) in the supine position during 5-min of spontaneous respiration and 3-min of controlled respiration at 0.1 Hz. Traditional time- and frequency-domain indices of heart rate and blood pressure variability were assessed by means of spectral analysis. Baroreflex sensitivity and phase shift between heart rate and systolic, diastolic, and augmented blood pressure were assessed by cross-spectral analysis. Augmented blood pressure defined at the time of the characteristic inflection point (second derivative `d` wave) of the finger arterial pressure waveform is strongly influenced by reflected pulse waves and closely corresponds to central systolic blood pressure. Both groups were compared by unpaired t-test.

Results: The phase shift between oscillations of heart rate and augmented blood pressure during controlled respiration was the only index which discrim-