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## Topic 3. Cardiomyopathies, heart failure, athletes, hypertension

Friday, June 14, 2019 - 10h00–11h00

Poster n° 29

### Left ventricular myocardial deformation pattern, mechanical dispersion and their relation with ecg markers in the large population-based stanislas cohort: Insights into electro-mechanical coupling



O. Huttin<sup>1,\*</sup>, V. Mario<sup>2</sup>, C. Stefano<sup>3</sup>, S.S. Christine<sup>1</sup>, B. Erwan<sup>1</sup>, V. Clement<sup>1</sup>, R. Patrick<sup>1</sup>, G. Nicolas<sup>1</sup>

<sup>1</sup> PH, CHU de Nancy - hopitaux de Brabois, Nancy, France

<sup>2</sup> PH, CHUV, Lyon, France

<sup>3</sup> PH, Université de Pérouse, Pérouse, Italie

\* Corresponding author.

E-mail address: [olivierhuttin@gmail.com](mailto:olivierhuttin@gmail.com) (O. Huttin)

**Introduction** Background: Mechanical alterations in patients with electrical conduction abnormalities are reported to have prognostic value in patients with left ventricular asynchrony or long QT syndrome beyond ECG variables. Whether conduction and repolarization patterns derived from ECG are associated with speckle tracking echocardiography (STE) parameters in patients without overt disease has not been previously investigated. To report ranges of longitudinal deformation according to conduction and repolarization values in a population-based cohort.

**Method** In total, 1140 subjects (48.6 ± 14.0 years,) enrolled in the STANISLAS cohort were studied. Echocardiography with layer-specific strain was performed in all subjects. RR, PR, QRS and QT intervals were retrieved from digitalized twelve-lead ECG. Echocardiographic data were stratified according to quartiles of QRS and QTc duration values.

**Results** Full-wall peak longitudinal strain (PLS) was  $-21.1\% \pm 2.5\%$  with a mechanical dispersion value of  $33.6 \pm 11.7$ ms. Absolute PLS value was lower in the longest QRS quartile and shortest QTc quartile (both  $P < 0.001$ ). Time-to-peak of strain was not significantly different according to QRS duration although significantly higher in patients with higher QTc ( $P < 0.001$ ). Mechanical dispersion was significantly greater in patients with longer QTc ( $32.45 \pm 11.68$  ms for QTc < 396 ms versus  $35.88 \pm 11.94$  ms for QTc > 421ms;  $P = 0.002$ ).

**Conclusion** QTc is associated with variations in normal values of the deformation pattern of longitudinal systolic strain such that

mechanical dispersion and QTc-specific normal values should preferentially be used. In a population-based setting, QRS is not associated with mechanical dispersion suggesting that echocardiography-based dyssynchrony does not largely overlap with ECG-based dyssynchrony.

**Disclosure of interest** The authors have not supplied their declaration of competing interest.

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June 14th, Friday 2019

Poster n° 30

### Effects of Patisiran, an RNA Interference Therapeutic, on Regional Left Ventricular Myocardial Deformation in Hereditary Transthyretin Amyloidosis: The APOLLO Study



M. Slama

Service Cardiologie, Hôpital Bichat, Paris, France

E-mail address: [prmslama@gmail.com](mailto:prmslama@gmail.com)

**Introduction** Cardiac amyloidosis patients demonstrate reduced myocardial strain with relative sparing of the cardiac apex. In APOLLO patisiran reduced NT-proBNP and left ventricular (LV) wall thickness and improved global longitudinal strain (GLS) relative to PBO in patients with hereditary transthyretin mediated (hATTR) amyloidosis.

**Method** An exploratory analysis from APOLLO, a randomized double-blind, PBO-controlled Ph3 trial in h ATTR amyloidosis with polyneuropathy, assessed effects of patisiran on LV regional strain. Patients were randomized 2:1 to receive 0.3 mg/kg patisiran or PBO via IV infusion once every 3 weeks for 18 months. The prespecified cardiac subpopulation ( $n = 126$ ) comprised patients with baseline LV wall thickness  $\geq 13$  mm and no history of hypertension or aortic valve disease. Patient underwent two-dimensional and speckle tracking echocardiography.

**Results** At baseline, average strain was lowest in the basal segments with apical sparing. Patisiran reduced GLS (LSM difference  $\pm$  SE;  $-1.36 \pm 0.56\%$ ,  $P = 0.014$ ) compared with PBO at 18