

## 1107 : Prospective study on spontaneous fluctuations between diagnostic and non-diagnostic ECGs in Brugada syndrome screening

### Authors:

**L. Ferreira Santos** (Hospital S&#x00E3;o Teot&#x03CC;nio, Viseu /Portugal), **E. Correia** (Hospital S&#x00E3;o Teot&#x03CC;nio, Viseu /Portugal), **B. Rodrigues** (Hospital S&#x00E3;o Teot&#x03CC;nio, Viseu /Portugal), **R. Faria** (Hospital S&#x00E3;o Teot&#x03CC;nio, Viseu /Portugal), **L. Nunes** (Hospital S&#x00E3;o Teot&#x03CC;nio, Viseu /Portugal), **A. Costa** (Hospital S&#x00E3;o Teot&#x03CC;nio, Viseu /Portugal), **J. Lopes Carvalho** (Hospital S&#x00E3;o Teot&#x03CC;nio, Viseu /Portugal), **C. Henriques** (Escola Superior de Tecnologia de Viseu, Instituto Polit&#x00E9;cnico de Viseu, Viseu /Portugal), **A. Matos** (Escola Superior de Tecnologia de Viseu, Instituto Polit&#x00E9;cnico de Viseu, Viseu /Portugal), **J. Oliveira Santos** (Hospital S&#x00E3;o Teot&#x03CC;nio, Viseu /Portugal)

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**Introduction:** All family members of patients with Brugada syndrome (BS) should be screened. Fluctuations between the diagnostic and non-diagnostic basal ECG pattern in patients with BS are known, but systematic studies are still lacking.

**Objectives:** Prospectively evaluate the spontaneous changes between diagnostic and non-diagnostic ECG patterns in a family screened for BS.

**Methods and Results:** 129 family members possibly affected plus the index case (mean age 25,22±16,64) were screened with two ECG with an interval of six months. The ECGs were analysed for the presence of coved type (type 1), saddle-back type (type 2 and 3) or no changes (normal). Only coved-type ECG pattern with more than 2 mm ST-segment elevation (type 1) in at least two right precordial leads was defined as diagnostic, and type 2 or 3 were only considered suggestive.

The first ECG made six (4,6%) diagnostics and the second 11 (8,5%), but only three of them maintained the diagnostic in the two ECG's. So, the two separated ECGs revealed 14 (10,8%) elements (eight males) with a type 1, five with type 2 and three with type 3. Patients with basal diagnostic ECG were older (37,43±11,07) than elements with non spontaneous diagnostic ECG (23,74±16,63) ( $p=0,001$ ). All 43 relatives aged under 16 years had normal basal ECG. No significant gender difference was found among relatives with or without diagnostic ECG. Body mass index (BMI) was significantly lower in those with diagnostic plus suggestive ECG when compared with the others (21,3±2,7 against 23,9±2,9) ( $p=0,003$ ). Additionally, logistic regression revealed that age and BMI are significant predictors of diagnostic ECG pattern.

Among the 14 relatives with diagnostic, eleven (79%) exhibited one non-diagnostic ECG and six (43%) one normal ECG. Out of the 22 elements with a suggestive or a diagnostic ECG, ten (45%) had the other ECG classified as normal. We found significant difference between the percentages of diagnoses with only the first ECG against two serial ECG. Among patients with diagnostic, no significant differences were found in age, gender and BMI between patients with or without fluctuations from diagnostic to non-diagnostic ECG or otherwise.

**Conclusion:** Spontaneous phenotypic manifestation of BS was more frequent in older elements, absent in children and related with low BMI. Characteristic ECG manifestations were intermittent in more than ¾ of the affected elements. The prevalence of fluctuations between diagnostic and non-diagnostic ECG may have an implication on the correct phenotyping in family screening so several ECG and drug challenging are mandatory.