Predictive factors of atrial fibrillation in patients' basal electrocardiogram with embolic stroke of undetermined source

López-Bravo. A[1,3]; Marín-Gracia. M[1]; Cantero-Lozano. D[2]; Revilla-Martí. P[2]; Navarro-Pérez. M[1,3]; Santos-Lasaosa. S[1,3]; Tejero-Juste. C[1]; Pérez-Lázaro. C[1,3]

[1]Neurology Department. [2]Cardiology Department. Clinical University Hospital "Lozano Blesa". [3]Aragon Institute of Health Science (IACS). Zaragoza, Spain

Introduction

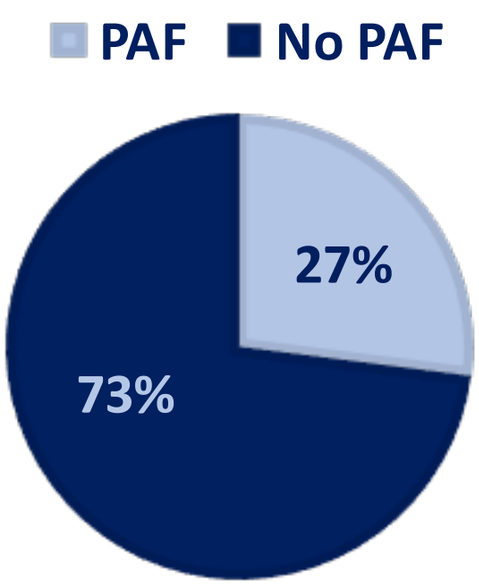
- Detection of paroxysmal atrial fibrillation (PAF) is essential to select an antithrombotic therapy in patients with embolic stroke of undetermined source (ESUS). The implantable cardiac monitorization improves the detection of PAF but it consumes time and economic resources.
- Therefore, a predictor of PAF may be useful for an adequate selection of patients. P-wave terminal force in lead V1 (PTFV1) is a marker of left atrial abnormality in the electrocardiogram associated with increased risk of PAF.
- In this study, we aimed to investigate the usefulness of predictors of PAF (PTFV1/PR interval/cQT interval/atrial premature complexes /left anterior fascicular block) in patients with ESUS.

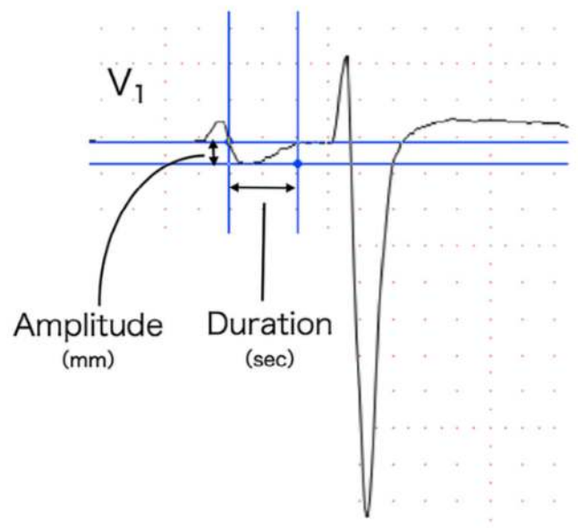
Material and methods

- Patients with a long-term insertable cardiac monitoring were included consecutively (June 2015-January 2018). Those with a known history of PAF or cardiac pacemaker were excluded. Clinical and electrocardiographic characteristics of patients with or without PAF were retrospectively analyzed. To confirm the accuracy of the electrocardiographic measurements a second investigator performed independently blinded measurements

Results

- Our sample included 44 patients, mean age 73.2 (± 9.1) years. The 61.4% were men. The 27.27% were diagnosed with PAF.
- PTFV1 was significantly higher in patients with PAF than those without PAF (0.054 versus 0.042 mm · s, p = 0.021). The Pearson's correlation coefficient for measurements between the 2 readers was 84% (p = 0.000).





PTFV1

The duration of the negative terminal deflection of the P-wave in V1 multiplied of its amplitude.

Demographic and clinical characteristics

	PAF n=12	No PAF n=32	pvalue*
Age (mean ± SD)	75.58 ± 6.31	72.38 ± 9.94	0.305
Sex (% males)	66.7	59.4	0.739
Hypertension (%)	91.7	59.4	0.068
Diabetes (%)	33.3	25.0	0.707
Coronary heart disease (%)	0.0	6.3	1.000
Peripheral arterial disease (%)	0.0	3.1	1.000
Enolism (%)	8.3	0.0	0.273
Active smoking (%)	16.7	6.3	0.297

Electrocardiographic parameters

	PAF n=12	No PAF n=32	pvalue*
PTFV1, mm·s, mean ± SD Investigator 1	0.054 ± 0.016	0,042 ±0.015	**0,021***
PTFV1, mm·s, mean ± SD Investigator 2	0.056 ± 0.016	0.039 ± 0.013	**0,001***
PR interval (mean ± SD) Investigator 1	178.75 ± 39.15	167.81 ±27.09	0.299
PR interval (mean ± SD) Investigator 2	178.33 ± 33.73	167.82 ±31.06	0.334
Atrial premature complexes (%) Investigator 1	16.7	12.5	0.720
Atrial premature complexes (%) Investigator 2	16.7	15.6	0.933
Left anterior fascicular block (%) Investigator 1	41.7	15.6	0.066
Left anterior fascicular block (%) Investigator 2	33.3	15.6	0.195
QTc, ms, mean ± SD	423.36 ± 27.69	425.74 ± 24.14	0.780
Heart rate, bpm, mean ± SD	66.75 ± 18.82	70,19 ± 12.72	0.490

Conclusion

- PTFV1 could be a strong predictor of PAF detection in patients with ESUS. Extensive ECG monitoring may be useful in detecting subclinical PAF in ESUS with left atrial abnormality defined by PTFV1.

References

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