Implantable cardiac monitor after cryptogenic stroke: atrial fibrillation detection and predictors

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Objective: The main objective of our study was to analyze the incidence and predictors of atrial fibrillation (AF) in patients with cryptogenic stroke (CS) who received an implantable cardiac monitor (ICM) at our Institution.
Methods: From November 2013 to October 2017, a total of 133 patients who had suffered a CS were implanted with an ICM after a thorough screening process. The median time between the thromboembolic event and ICM implantation was 64 days [IQ range: 16–111]. All implanted patients were followed with remote monitoring until the first detected episode of AF or up to December 2018. Every remote monitoring transmission and related electrograms were analyzed by the dedicated Electrophysiology Nursing team and confirmed by experienced Electrophysiologists. AF was defined by any episode lasting greater than or equal to 2 minutes.
Results: During a median follow-up of 14.8 months [IQ range: 3.0–31.2], AF was detected in 65 out of 133 patients (48.9%). The median time from ICM implantation and AF detection was 3.5 months [IQ range: 0.9–6.7]. The prevalence of AF was 22.6%, 34.4%, 40.8% and 48.3% at 3, 6, 12 and 24 months respectively. At the multivariate analysis, high premature atrial contractions (PAC) burden and left atrium (LA) dilation were the only independent predictors of AF detection (HR 2.82, 95% CI 1.64–4.83, p<0.001 for PAC; HR 1.75, 95% CI 1.03–2.97, p=0.038 for LA dimension). Patients were dived into categories based on the probability of AF detection (low, intermediate and high risk) and a new risk stratification algorithm was implemented (Figure 1).
Conclusion: After a thorough screening process, AF detection in patients with CS and ILM was quite high. Having a high PAC burden and LA dilation predicted AF episodes at the multivariate analysis. A new risk stratification algorithm was developed.
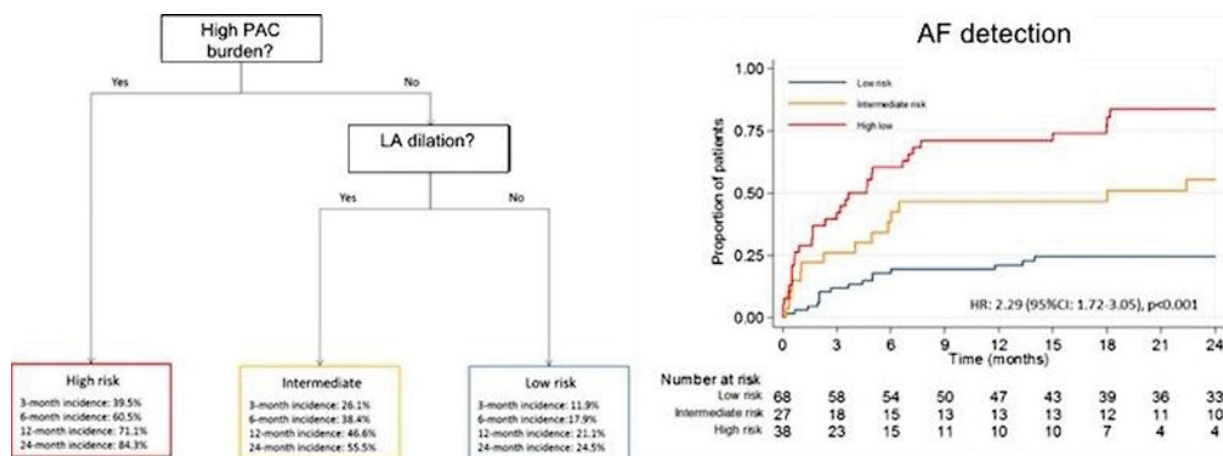
Figure 1