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Title: Prevalence of atrial fibrillation in patients with sarcoidosis

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Body: Introduction: Sarcoidosis is a multisystemic disease associated with arrhythmias, however the development of atrial fibrillation (AF) has not been described. Aim of this study was the estimation of AF in sarcoidosis. Methods: 198 biopsy proven sarcoid patients underwent 24-hour- ECG, cardiac echo, cardiac MRI including viability (c-MRI) and pulmonary function tests including total lung capacity(TLC) and diffusion capacity (DLCO). B-natriuretic peptide (BNP) was measured. Results: Group A consisted of 49 patients having paroxysmal AF (24. 7%) while the rest formed group B. Group A had higher age (56.2±13.1 vs 46.3±11.5 yo, p=0.0001), larger left ventricular end diastolic diameter (48.1±4.4 vs 49.55±4.23 mm, p=0.021), increased interventricular septum (10.3±1.1 vs 9. 6±1.2mm,p=0.001), lower ejection fraction(59.8±2 vs 58.5±4.5%,p=0.032),lower forced vital capacity (96.5±17.9 vs 88.5±21.2% of the predicted, p=0.012), lower TLC (85.23±14.4vs 80.24±14.05% of the predicted, p=0.041) and higher BNP level (21.05±23.44vs35.3±38.9 pg/dl, p=0.004). Higher percentage of gadolinium enhancement in MRI, cardiac involvement and cortisone were in group A (p=0.009, p=0.002 and p=0.011 respectively). Staging of the disease, DLCO and disease duration were not different among the two groups. Binary logistic regression showed that BNP (95%CI:1.003-1.043; p=0.018), c-MRI(95%CI:0.092-0.99;p=0.041), IVS (95%CI:1.312-4.290;p=0.001) and ejection fraction(95%CI:0.445-0.91;p=0.001) were independently linked to the AF. Discussion: BNP, gadolinium enhancement assessed by c-MRI, ejection fraction and interventricular septum are linked to the pathomechanism of atrial fibrillation in patients with sarcoidosis independent of cardiac involvement.