



## **Additional factors underlying pacing induced cardiomyopathy in patients underwent right ventricular pacing and his bundle pacing**

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## **Additional factors underlying pacing induced cardiomyopathy in patients underwent right ventricular pacing and his bundle pacing**

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I have read with great interest the article comparing the impact of right ventricular pacing (RVP) and His bundle pacing (HBP) on cardiac fibrosis and systolic function. Mizner et al. reported that HBP is related to better systolic functions compared to RVP and fibrosis markers increases in patients with ejection fraction reduced more than 5% during follow-up [1].

Although the most common cause of advanced atrioventricular (AV) blocks is idiopathic fibrosis of conduction system by ageing; cardiomyopathies and drug toxicities also may result in advanced AV blocks [2]. Sarcoidosis and amyloidosis are well known diseases related to cardiac involvement and advanced conduction system disorders. Both sarcoidosis and amyloidosis tends to progress despite the current optimal treatment [3]. Therefore, it would be valuable if the study population were screened for such cardiomyopathies because the reduction in ejection fraction and increased fibrosis markers might have regarded the progression of the underlying disease rather than the pacing related cardiomyopathy.

Current evidences from heart failure treatment points out that some medications including renin- angiotensin-aldosterone system inhibitors and SGLT2 inhibitors have beneficial effects on cardiac remodeling [4]. A significant proportion of the study population have comorbidities such as hypertension, diabetes and coronary artery disease and so, most of these patients might have been under treatment with abovementioned drugs. The use of these drugs might have affected the results including change in ejection fraction and fibrosis markers.

Programming the cardiac implantable electronic device is crucial, because it may affect the pacing rates. Heart rate decreases during night [5] and if the heart rated reduces below the under

limit, pacemaker intercede to pace resulting in increased pacing rates. Beta blockers also decreases heart rates and may cause increased ventricular pacing burden. Therefore, I think it is important to take the baseline set lower heart rate limit and use of beta blockers into account in assessing the burden of ventricular pacing.

To conclude; of course pacing induced cardiomyopathy may develop in patients with high ventricular pacing burden, the impact of used medications and possible underlying cardiomyopathies should not be overlooked.

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