CLINICS

READERS OPINION

Electrocardiographic data should be coupled with tissue-Doppler imaging and clinical follow-up evaluation to determine cardiac involvement in lichen planus

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To the Editor,

In the recent issue of your journal, we were pleased to read an interesting article by Şahin et al. (1) evaluating *p*-wave dispersion (PWd) in 58 patients with lichen planus (LP) compared to 37 age- and gender-matched healthy controls. The authors showed that PWd was higher in LP patients compared to healthy controls (39.9 ± 12.9 msec *vs.* 32.4 ± 11.8 msec, $p = 0.005$). Additionally, high-sensitivity C-reactive protein (hsCRP), low-density lipoprotein (LDL)-cholesterol and triglyceride levels were significantly higher in the LP group compared to the healthy controls. Furthermore, hsCRP levels were positively correlated with PWd.

Atrial fibrillation (AF) is the most common clinical arrhythmia and presents as heterogeneous and discontinuous intra- and/or inter-atrial conduction due to several insults (e.g., inflammatory status) that promote atrial structural remodeling and provide a substrate for AF (2). In previous studies, Dilaveris et al. (3) described a new ECG index (PWd) and demonstrated that a *p* maximum >110 msec and a PWd >40 msec were simple and noninvasive parameters for the prediction of paroxysmal lone AF; Aytemir et al. (4) reported similar findings at a *p* maximum >106 msec and a PWd >36 msec. Thereafter, *p*-wave indices have been applied in a wide range of clinical contexts (5-9). The study by Şahin et al. (1) was the first in the literature to evaluate this marker in LP patients. However, mean *p*-wave indices in the study by Şahin et al. (1) were lower than described by Dilaveris et al. (3) and Aytemir et al. (4) in the prediction of paroxysmal lone AF. This result may be due to several differences among those studies, including different patient populations and risk factors and relatively short disease durations for the LP patients. Additionally, the study results should be interpreted in the context of the effects of LP on serum lipid levels (i.e., higher LDL-cholesterol and triglyceride levels), which are known as significant risk factors for chronic inflammation and AF development (10,11).

Moreover, despite the volume of studies on this topic, *p*-wave index reference values and measurement techniques have not been standardized. Therefore, echocardiographic and clinical follow-up data could assist with determining the impact of both cardiac and non-cardiac diseases on *p*-wave indices. Other studies have suggested that intra- and/or inter-atrial electromechanical delays measured by tissue-Doppler imaging could be useful markers for the prediction of paroxysmal AF along with PWd (12-14). In addition to the non-invasive measurements, clinical follow-up data are essential to predict several parameters of AF development accurately.

In conclusion, Şahin et al. highlighted LP as a chronic inflammatory condition and described the impact of this condition on atrial conduction using *p*-wave indices. However, tissue-Doppler imaging with echocardiography and the collection of clinical follow-up data related to AF development should be considered in future studies in addition to electrocardiographic evaluation.

REFERENCES

1. Sahin M, Bilgili SG, Simsek H, Akdag S, Akyol A, Gumrukcuoglu HA, et al. Increased P-wave dispersion in patients with newly diagnosed lichen planus. Clinics. 2013;68(6):846-50, http://dx.doi.org/10.6061/clinics/2013(06)20.
2. Dilaveris PE, Gialafos JE. P-wave dispersion: a novel predictor of paroxysmal atrial fibrillation. Ann Noninvasive Electrocardiol. 2001;6(2):159-65, http://dx.doi.org/10.1111/j.1542-474X.2001.tb00101.x.
3. Dilaveris PE, Gialafos EJ, Sideris SK, Theopistou AM, Andrikopoulos GK, Kyriakidis M, et al. Simple electrocardiographic markers for the prediction of paroxysmal idiopathic atrial fibrillation. Am Heart J. 1998;135(5 Pt 1):733-8, http://dx.doi.org/10.1016/S0002-8703(98)70030-4.
4. Aytemir K, Ozer N, Atalar E, Sade E, Aksöyek S, Ovünç K, et al. P wave dispersion on 12-lead electrocardiography in patients with paroxysmal atrial fibrillation. Pacing Clin Electrophysiol. 2000;23(7):1109-12, http://dx.doi.org/10.1111/j.1540-8159.2000.tb00910.x.
5. Ozer N, Aytemir K, Atalar E Sade E, Aksöyek S, Ovünç K, et al. P wave dispersion in hypertensive patients with paroxysmal atrial fibrillation. Pacing Clin Electrophysiol. 2000;23(11 Pt 2):1859-62.
6. Aytemir K, Amasyali B, Abali G, Kose S, Kilic A, Onalan O, et al. The signal-averaged P-wave duration is longer in hypertensive patients with history of paroxysmal atrial fibrillation as compared to those without. Int J Cardiol. 2005;103(1):37-40.
7. Duru M, Seyfeli E, Kuvandik G, Kaya H, Yalcin F. Effect of weight loss on P wave dispersion in obese subjects. Obesity (Silver Spring). 2006;14(80):1378-82, http://dx.doi.org/10.1038/oby.2006.156.
8. T Tükek T, Yildiz P, Akkaya V, Karan MA, Atilgan D, Yilmaz V, et al. Factors associated with the development of atrial fibrillation in COPD

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patients: the role of P-wave dispersion. Ann Noninvasive Electrocardiol. 2002;7(3):222-7, http://dx.doi.org/10.1111/j.1542-474X.2002.tb00167.x.
9. Simsek H, Gunes Y, Demir C, Sahin M, Gumrukcuoglu HA, Tuncer M. The effects of iron deficiency anemia on p wave duration and dispersion. Clinics. 2010;65(11):1067-71, http://dx.doi.org/10.1590/S1807-59322010001100001.
10. Lee KT, Hsieh CC, Tsai WC, Tang PW, Liu IH, Chai CY, et al. Characteristics of atrial substrates for atrial tachyarrhythmias induced in aged and hypercholesterolemic rabbits. Pacing Clin Electrophysiol. 2012;35(5):544-52, http://dx.doi.org/10.1111/j.1540-8159.2012.03355.x.
11. Tadic M, Ivanovic B, Cuspidi C. What Do We Currently Know About Metabolic Syndrome and Atrial Fibrillation? Clin Cardiol. 2013 Jun 20. http://dx.doi.org/10.1002/clc.22163. [Epub ahead of print].
12. Deniz A, Yavuz B, Aytemir K, Hayran M, Kose S, Okutucu S, et al. Intra-left atrial mechanical delay detected by tissue Doppler echocardiography can be a useful marker for paroxysmal atrial fibrillation. Echocardiography. 2009;26(7):779-84, http://dx.doi.org/10.1111/j.1540-8175.2008.00881.x.
13. Deniz A, Sahin DY, Kanadasi M, Demir M, Berk IG, Akkus O, et al. Conduction characteristics in atrial fibrillation: Predictive value of tissue Doppler echocardiography. Herz. 2013 Apr 17. [Epub ahead of print].
14. Weijs B, de Vos CB, Limantoro I, Cheriex EC, Tieleman RG, Crijns HJ. The presence of an atrial electromechanical delay in idiopathic atrial fibrillation as determined by tissue Doppler imaging. Int J Cardiol. 2012;156(1):121-2.