

drug (Remsima). The other had been using the original infliximab since 2015, but had stopped treatment 4 months earlier due to shortage of the medication, developing an infusion reaction during the first dose of Remsima. In addition, one infliximab-naïve patient lost weight, had a strong reaction to the PPD test, and developed pulmonary nodules after 7 months of treatment with the biosimilar. When the diagnosis of pulmonary tuberculosis was confirmed, the medication was discontinued and treatment for tuberculosis was initiated.

The 35 remaining patients had no reactions or adverse effects and showed controlled skin and/or joint symptoms, with PASI scores ranging from 0 to 2.7.

CT-P13 (Remsima®, Pfizer) is biologically similar to the original infliximab, a chimeric human-murine monoclonal antibody to TNF- $\alpha$ .<sup>3</sup> It has been commercially available in Brazil since 2017, after the patent of the original drug had expired, and it was approved for the same indications as the original drug, including rheumatoid arthritis, ankylosing spondylitis, Crohn's disease, rectal ulcerative colitis, psoriatic arthritis, and psoriasis.

Like previous European studies, our results suggest that the introduction or the switch to CT-P13 appears to be safe. Regarding drug efficacy, the original and the biosimilar showed similar results in most patients.<sup>4,5</sup> It is important to highlight that despite these positive results, most of our patients were clinically stable at the beginning of the study, showing good previous control.

Studies with larger cohorts and longer follow-up are still needed, but our preliminary results show that biosimilars may provide an opportunity to reduce health system costs because of their similarity to reference drugs in terms of safety and efficacy. □

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*How to cite this article:* Kurizky PS, Galvão LO, Martins GA. Efficacy and safety of biosimilar infliximab CT-P13 in the treatment of psoriasis and psoriatic arthritis: 1-year follow-up. *An Bras Dermatol*. 2019;94(4):483-4.

## P-wave dispersion in vitiligo patients\*

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DOI: <http://dx.doi.org/10.1590/abd1806-4841.20198391>

#### Dear Editor,

Vitiligo is an acquired depigmentation disorder of unknown origin.<sup>1</sup> Melanocytes are found in the heart valves and septum, the atrium, and the vessels, with possible role in abnormal signals and atrial arrhythmia.<sup>2</sup> P-wave dispersion (PWD) is the difference between P-max and P-min in 12-lead electrocardiography.<sup>3</sup> Assess-

Received 24 April 2018.

Accepted 30 August 2018.

\* Study conducted at the Department of Cardiac Aspects of Skin Diseases, Skin Research Center, Shohada-e Tajrish Hospital, Shahid Beheshti University of Medical Sciences, Tehran, Iran.

Financial support: None.

Conflict of interest: None.

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TABLE 1: P-max, P-min, and P-wave dispersion (PWD) across the groups

	P-max		P-min		PWD	
	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation
Case	100.00	12.06	44.17	4.25	55.83	11.65
Control	100.17	10.52	45.70	3.89	54.47	9.85

ment of possible risk is useful, especially regarding the accessibility of electrocardiography in all health care centers and the possible association between some electrocardiogram (ECG) alterations and the presence of arrhythmia, even in healthy subjects. Hence, the purpose of this study was to determine the PWD in vitiligo patients *vs.* control subjects. A case-control study was performed in a referral dermatology outpatient clinic in Shohada-e-Tajrish Hospital, affiliated with the Shahid Beheshti University of Medical Sciences, Tehran, Iran, during a one-year period (October 2016 to October 2017). A total of 94 participants were included in this study, *i.e.*, 47 patients with vitiligo and 47 healthy volunteers. The exclusion criteria were history of other diseases, smoking, and obesity. The medical assessment involved natural and Wood's light examinations consistent with the modified Vitiligo European Task Force form. Based on the Vitiligo European Task Force, a patient's palm, corresponding to 1% of body surface area, was used to calculate the total vitiligo extension. The P-max and P-min were calculated in all 12 ECG leads and the difference between them was defined as the PWD. Data analysis was performed using SPSS (v 18.0) software, utilizing the chi-squared test and Student's *t*-test for independent samples. Statistically significant p-values were those less than 0.05. In each group, 32 patients were female. The mean (standard deviation) age was 34.9 (12.1) and 32.8 (11.3) years in the case and control groups, respectively ( $p > 0.05$ ). The vitiligo type was vulgaris in 87.2% and acrofacial in 12.8%. The mean involved body area by vitiligo in case group was 30%. The results in Table 1 demonstrate that PWD was alike across the case groups ( $p > 0.05$ ). The EF, heart rate, and blood pressures had no significant differences ( $p > 0.05$ ). Baldini *et al.* reported that vitiligo has been associated with other rare systemic disorders.<sup>4</sup> However, there was no significant association in the present study. Fairfax *et al.* found an association between vitiligo, primary hypothyroidism, pernicious anemia, and idiopathic chronic heart block.<sup>5</sup> In sum, it may be concluded that PWD in vitiligo patients *vs.* control subjects is not significantly differed. Hence, there is no screening requirement for cardiovascular disorders in patients with vitiligo. □

#### ACKNOWLEDGMENTS


The authors would like to thank the patients participating in this study.


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**How to cite this article:** Nasiri S, Pishgahi M, Ahmadi S, Dadkhahfar S. P-wave dispersion in vitiligo patients. *An Bras Dermatol.* 2019;94(4):484-5.