

**Editorial**

**Koronar yavaş akım fenomeni: Bir adım ileri iki adım geri**

**Coronary slow flow phenomenon: one step forward, two steps back**

**Dr. Serdar Sevimli**

Atatürk University Faculty of Medicine, Heart Center, Department of Cardiology, Erzurum

**Abbreviations:**

*CSFP* Coronary slow flow phenomenon

*LV* Left ventricle

Coronary slow flow phenomenon (CSFP) has been defined as delayed filling of distal arterial bed with contrast material in patients with angiographically normal or near-normal coronary arteries. Firstly in 1972 it was described in a study including six patients.[1] During more than forty years since its first description, many studies have been performed concerning its frequency, etiology, and pathogenesis. [2-6] These studies have suggested that CSFP might have an impact on LV systolic, and diastolic functions. . However a study conducted by Zencir et al. [7] and published in this issue of *Archives of Turkish Society of Cardiology* [2013;41(8):697-698] preservation of systolic, and diastolic functions has been asserted. Left ventricular systolic, and diastolic functions can be evaluated using

various methods. The most frequently employed methods include echocardiography, magnetic resonance imaging, and diagnostic cardiac catheterization. However, in clinical practice mostly echocardiographic (ECHO) examinations have been performed to that end. LV functions are evaluated echocardiographically in M-mode, Doppler, and 2D deformation (strain) echocardiographies. Studies performed on patients with CSFP, any modality apart from echocardiographic examinations has not been employed, and moreover Doppler echocardiography was preferred in all these investigations. The most important Achilles tendon of these studies is its already acknowledged technical limitations of Doppler ECHO namely its dependence on angle of

*Address of correspondence:* Dr. Serdar Sevimli. Atatürk Üniversitesi Tıp Fakültesi, Kalp Merkezi, Kardiyoloji Anabilim Dalı, Erzurum.

*Phone:* +90 442 - 316 63 33 / 1454 *e-mail:* drserdarsevimli@hotmail.com

projection, and higher interindividual variability.[8,9] Zencir et al. couldn't find any difference between control, and CSFP groups, however some studies revealed some intergroup differences .[2-6] Diversities between the results of these studies might be partly explained by the limitations of Doppler echocardiography. In addition, some parameters of Doppler echocardiography can remain inadequate even in the group of patients with systolic heart failure. Therefore diagnostic sensitivity of Doppler ECHO might decrease considerably in patients with preserved LV ejection fraction.[10] However case-control design, and scarcity of these studies lead the way to systematic bias. As a concluding remark, whether CSFP affects LV systolic, and diastolic functions is not a clear-cut issue. Further studies using different study designs, and more objective methods are needed to reveal the association between CSFP, and LV functions.

Conflict of interest: None declared

## REFERENCES

1. Tambe AA, Demany MA, Zimmerman HA, Mascarenhas E. Angina pectoris and slow flow velocity of dye in coronary arteries-a new angiographic finding. *Am Heart J* 1972; 84:66-71.
2. Tanriverdi H, Evrengul H, Kilic ID, Taskoylu O, Dogan G, Alpsoy S. Aortic pressures, stiffness and left ventricular function in coronary slow flow phenomenon. *Cardiology* 2010;116:261-7.
3. Nurkalem Z, Gorgulu S, Uslu N, Orhan AL, Alper AT, Erer B, et al. Longitudinal left ventricular systolic function is impaired in patients with coronary slow flow. *Int J Cardiovasc Imaging* 2009;25:25-32.
4. Elsherbiny IA. Left ventricular function and exercise capacity in patients with slow coronary flow. *Echocardiography* 2012;29:158-64.
5. Baykan M, Baykan EC, Turan S, Gedikli O, Kaplan S, Kiriş A, et al. Assessment of left ventricular function and Tei index by tissue Doppler imaging in patients with slow coronary flow. *Echocardiography* 2009;26:1167-72.
6. Sevimli S, Büyükkaya E, Gündoğdu F, Arslan S, Aksakal E, Gürlertop Y, et al. Left ventricular function in patients with coronary slow flow: a tissue Doppler study. *Turk Kardiyol Dern Ars* 2007;35:360-5.
7. Zencir C, Çetin M, Güngör H, Karaman K, Akgüllü Ç, Eryılmaz U, et al. Evaluation of left ventricular systolic and diastolic functions in patients with coronary slow flow phenomenon. *Turk Kardiyol Dern Ars* 2013;41:691-6.
8. Mondillo S, Galderisi M, Mele D, Cameli M, Lomoriello VS, Zacà V, et al. Speckle-tracking echocardiography: a new technique for assessing myocardial function. *J Ultrasound Med* 2011;30:71-83.
9. Dandel M, Hetzer R. Echocardiographic strain and strain rate imaging-clinical applications. *Int J Cardiol* 2009;132:11-24.
10. Mullens W, Borowski AG, Curtin RJ, Thomas JD, Tang WH. Tissue Doppler imaging in the estimation of intracardiac filling pressure in decompensated patients with advanced systolic heart failure. *Circulation* 2009;119:62-70.