



4th International Congress of Turkish Neuroendocrinology Society | ISTANBUL

26 | 28
November
2020



**Effects of melatonin and postconditioning on
reperfusion arrhythmias and the nesfatin-1 levels**

Gülnur ASLAN, Engin ŞAHNA

Fırat University, Faculty of Medicine, Department of Medical
Pharmacology

Poster # PC37



4th International Congress of Turkish Neuroendocrinology Society | ISTANBUL

26 | 28
November
2020



AIM: Reperfusion arrhythmias are considered as an indicator of injury to the cells that provide cardiac conduction while restoring blood flow to the ischemic heart. Nesfatin-1 is an adipokine that inhibits the inflammatory response. It has been reported that the inflammatory process may be an important factor in cardiac rhythm disorders. This study aimed to investigate the effect of ischemic postconditioning (PostC), a cardiac protective phenomenon, and melatonin, an antioxidant hormone, on reperfusion arrhythmias and the nesfatin-1 levels.

METHODS: Rats were randomly divided into 4 groups as control, ischemia-reperfusion (I/R), I/R+PostC and I/R+melatonin.

The left coronary artery was occluded for 7 min and reperfused for 7 min. At the beginning of reperfusion, PostC was applied as three cycles as ischemia for 10 sec and reperfusion for 10 sec and melatonin was administrated by intraperitoneal injection during the last 10 days.

Arrhythmias were evaluated as appropriate in Lambeth Conventions. The nesfatin-1 level was analyzed by the Elisa method.

Differences in incidence between arrhythmias were evaluated using Fisher Exact test and group averages using the Mann-Whitney-U test.



4th International Congress of Turkish Neuroendocrinology Society | ISTANBUL

26 | 28
November
2020



RESULTS: Ventricular extrasystole and incidence of ventricular tachycardia due to I/R injury decreased with PostC and melatonin treatment, and the time to first ventricular extrasystole prolonged with treatments. Nesfatin-1 levels decreased significantly with I/R, while it increased significantly with PostC and melatonin

Table 1: Change of reperfusion arrhythmias by groups.

a: Significant difference compared to I/R due to the PostC administration,

b: Significant difference compared to I/R due to the melatonin administration ($p < 0.05$).

	Ventricular extrasystole count	Ventricular tachycardia incidence (%)	Time to first ventricular extrasystole (sec)
I/R	19(7-74)	51,9	36(14-62)
I/R+POSTC	3(0-11) ^a	14,3 ^a	50(22-88)
I/R+MEL	5 (0-15)	28,6 ^b	54(24-94)

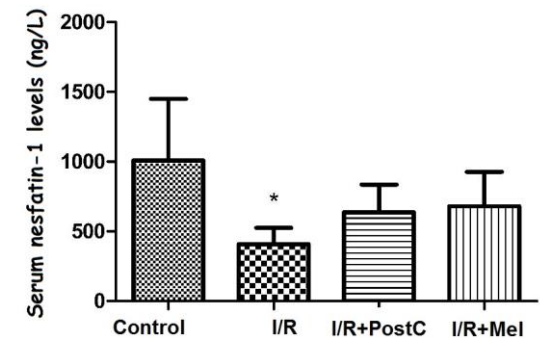


Figure 1: The change of Nesfatin-1 level by groups.

*: Significant difference compared to control ($p < 0.05$).



4th International Congress of Turkish Neuroendocrinology Society | ISTANBUL

26 | 28
November
2020



CONCLUSION:

PostC and melatonin may reduce reperfusion arrhythmias. The decrease in nesfatin-1 levels may be one of the factors causing the arrhythmias.

PostC and melatonin may have similar protective effects on reperfusion arrhythmias and nesfatin-1 levels.