

Quercetin is a potential therapy for post-infarction NETosis formation

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Utility of NKX3.1 immunohistochemistry in the differential diagnosis of seminal vesicles versus prostatic tissue in needle biopsy

[Y Goshovska](#)¹, [D Pashevin](#)², [S Goncharov](#)², [T Lapikova-Bryhinska](#)², [O Lisovyi](#)³, [V Nagibin](#)², [G Portnichenko](#)², [L Tumanovska](#)², [V Dosenko](#)²

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Abstract

The surgical intervention during myocardial infarction (MI) is associated with the risk of reperfusion injury, infiltration of tissues with polymorphonuclear neutrophils, and neutrophil extracellular trap (NET) formation. We hypothesized that inhibition of NETs with the use of quercetin might be a promising cardioprotective strategy. Wistar rats underwent LAD occlusion (MI) for 40 min followed by 90 min of reperfusion. The MI + Q group received a water-soluble form of quercetin (50 mg/kg, "Corvitin," BCPP, Ukraine) into the tail vein 10 min before reperfusion. The post-MI administration of quercetin significantly alleviated cardiac dysfunction. End-systolic pressure, stroke volume, cardiac output, and stroke work were significantly improved in the MI + Q vs. MI group. NET formation (examined by fluorescence microscopy and Hoechst staining) as well as free DNA in blood plasma was reduced in the MI + Q group that might be one of the mechanisms of the cardioprotective effect of quercetin. Postconditioning with quercetin might be used as a therapeutic tool for the alleviation of reperfusion injury and NETosis inhibition in vivo.

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