

Changes in Echocardiographic Parameters in Patients with COVID-19 on the Background of Cardiovascular Diseases

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Introduction. Many people who have been ill with coronavirus, even in a mild form, note that they experience various negative sensations in the body even months after recovery. Currently, a specialized term has appeared to define this condition - post-covid syndrome. Post-COVID-19 syndrome, also known as Long Covid, is a consequence of coronavirus infection (COVID-19), in which up to 20% of people who have had a coronavirus infection suffer from long-term symptoms lasting up to 12 weeks and in 2.3% of cases longer. This can happen soon after discharge and after three months. Moreover, a mild form of covid is not a guarantee of the absence of post-covid syndrome.[1].

In the United States, at the end of April, the 1st confirmation of the proposed concept appeared: New York doctors observed 2 patients with COVID-19, who recorded a rapid improvement in their general condition after a single intravenous injection of reduced glutathione (shortness of breath practically disappeared 1 hour after the injection) [2] Clinical trials of the efficacy of N-acetylcysteine (a precursor and modulator of endogenous glutathione synthesis) in the treatment of severe patients with COVID-19 have already been initiated in the USA [3]. In connection with these scientific facts, it is of interest to study the role of glutathione in the recovery period after a coronavirus infection.

Purpose study of the features of the clinical course of the post-COVID period and the effect of the complex use of glutathione on the recovery period of patients who underwent COVID-19.

Material and methods. The were examined 58 patients with COVID - 19. There were 37 men and 21 women with a confirmed diagnosis of coronary artery disease and hypertension. All of them underwent an echocardiographic study The average age of patients was 62.7±0.76 years. All patients were divided into two group according taking a glutathione. This food supplement is a powerful detoxifying agent and is a cofactor of the phase II detoxification enzyme - glutathione-s-transferase, which detoxifies a wide range of toxic compounds, including heavy metals.

The 1st group patients were took a glutathione for a month and the 2nd group didn't take glutathione.

Results of Echo showed that of the both group LV systolic functions parameters was intermediate. After a month we compared LV systolic functions into 2 group and found following changes. In the 1st group before taking a glutathione EDV was 111,4±6,2 ml; ESV-48,0±4,5 ml, EF-56,4±0,4% and SV-63,5±1,2 ml. In dynamics this parametrs changed, SV became- 68,5±1,2ml and EF- 59,31±0,4%. In the 2nd group patients moved from with intermadiate LVEF to low EF, which indicates an aggravation of CHF as a result of a coronavirus infection.

In our research showed that food supplement glutathione had a positive influence for LV systolic functions in patients with COVID-19 on the background of cardiovascular diseases.

Indicators of the effect of complex therapy with Glutaredox on clinical parameters in patients with post-covid syndrome

Clinical syptoms	Before treatment with Glutaredox, (n, %)	After treatment with Glutaredox after 1 month of treatment, (n, %)	P
Headache	25 (43,1%)	19 (32,7%)	p<0,05
Dizziness	15 (25,8%)	11 (18,9%)	p<0,05
Weakness	44 (75,8%)	36 (62,0%)	p<0,01
Fast fatiguability	44 (75,8%)	31 (53,4%)	p<0,01
muscle weakness	30 (51,7%)	25 (43,1%)	p<0,05

1. Callard F., Perego E.: How and why patients made Long Covid. Soc. Sci. Med., 2021;
 2. <https://www.sciencedirect.com/science/article/pii/S22133007120301350>.
 3. <https://clinicaltrials.gov/ct2/show/study/NCT04374461>

