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FEATURES OF CHANGES IN THE CARDIOVASCULAR SYSTEM IN PATIENTS WITH COVID-19

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Abstract: The COVID-19 pandemic has brought to light a multitude of effects the virus can have on the body, including the cardiovascular system. Patients with COVID-19 may experience a range of changes in their cardiovascular health, some of which can have long-term implications.

Keywords: Virus, effects, patients, global problems, medical treatments.

Introduction: According to the recommendation of experts on the coronavirus, the extent of damage to the lungs by COVID-19 is determined by computer tomography. Analyzes clearly show the level of lung tissue damage. Italian scientists refer to COVID-19 as "distributed coagulation (thrombosis) within the blood vessels." Also, they express the opinion that in this disease blood is transfused, and the transfused blood cannot be saturated with oxygen in the lungs. They confirm on the basis of investigations that systemic changes are observed in the cardiovascular system and other organs due to blood rheology disorders and intoxication caused by COVID-19.

According to the experts on COVID-19, during recovery from coronavirus, after a severe course of the disease, fibrotic changes are observed in the lungs, the respiratory function of the lungs is restored, shortness of breath disappears, and the patient can tolerate physical exertion. Good tolerance depends on the severity of the disease. The extent to which the disease has been cured can only be clearly seen through functional examinations, including X-ray.

- In today's death rates, only patients with confirmed COVID-19 are recorded, but pneumonia is not included. How much do you think the incidence and mortality of pneumonia has increased?

- In fact, only confirmed cases of the disease are included in the list of deaths, and this is correct. Chinese, Israeli and US researchers believe that when the lungs are infected with the coronavirus, its condition is different from that of pneumonia. In order to confirm the fact, it is emphasized that patients should be re-tested for coronavirus and examined by computer tomography.

According to the experts, about 80 percent of those infected with the coronavirus will have a mild illness, but 5 percent of the patients will be seriously ill, and they will be placed in special hospitals and require the help of resuscitators.

- To what extent does smokers' infection with COVID-19 worsen the course of the disease?

- COVID-19 is a virus that primarily affects the respiratory organs, the lungs. If a person is infected with this virus, the symptoms of intoxication of the disease are different. Research shows that smoking makes people sick with pneumonia or the flu worse.

Smoking damages the mucous membrane of the lungs and disrupts respiratory clearance, that is, it removes pathogenic bacteria and viruses from the respiratory organs in small quantities, as a result of which the body cannot get rid of them. So, smokers can put their lives at risk if they get infected with the coronavirus.

It should also be mentioned that the immune system of e-cigarette smokers is also weakened, and various complications increase when infected with a virus.

It was found that many smoking patients infected with COVID-19 could not be saved even if they were connected to "IVL" - artificial respiration devices. Therefore, this harmful habit should be abandoned.

- What recommendations can you give for the use of oxygen equipment at home? Although dangerous, many still use homemade balloons.

- An oxygen concentrator is a completely safe device. In it, oxygen is not stored in a compressed or liquefied form, but the oxygen is released during the operation of the concentrator. It allows the human body to breathe oxygen in the concentration necessary for the human body, together with an air humidifier. This device is safe compared to oxygen cylinders.

Hand-made oxygen cylinders can damage the mucous membrane of organs related to breathing and the whole body. The pure oxygen that the patient breathes must be moistened, unmoistened oxygen causes dryness and itching in the respiratory tract. An air humidifier must be included in the oxygen concentrator kit.

Ambient air is a mixture of various gases, mainly nitrogen and oxygen. 78% nitrogen and 21% oxygen in the air is considered normal. A decrease in oxygen concentration of 7% will lead to human death.

- Today, it is very important to increase immunity in the fight against disease. What easy tips would you give for this?

- This disease mainly affects the upper and lower respiratory tract. People with strong immunity have a very low risk of contracting this disease, and even if they do get it, they get over it easily.

Therefore, it is necessary to strengthen immunity. How? Through proper nutrition, physical education and breathing exercises.

The diet must contain proteins, the food should be varied and contain a lot of minerals, vitamins, especially vitamin C.

Top 9 products:

1. Lemon. Grind lemon in a blender, add a little sugar and eat one teaspoon three times a day.

2. Chakanda (oblepixa). Useful properties are also preserved in dried fruits. Drink chakanda fruit tea every day.

3. Currant. Both jam and frozen are equally useful. In addition to vitamin C, this fruit contains A, V6, V12, calcium, potassium, iron, magnesium and sodium.

4. Namatak. It is very useful to drink Namatak syrup and tea from its fruits. In the evening, put ten fruits of namatak in a thermos and pour boiling water over it. The next day, drink this tincture throughout the day. This drink increases immunity.

5. Sauerkraut. Serve sauerkraut with a little olive oil and finely chopped onion.

6. Onion. Everyone knows that onions are natural antibiotics.

7. Garlic. In addition to preventing wind and viruses, garlic is very useful for patients with cardiovascular diseases. It lowers blood pressure and cholesterol levels.

8. Cottage cheese. Homemade cottage cheese is especially useful. Eating 150 g of cottage cheese with currants, chakanda or lemon per day is very beneficial for the body.

9. Egg. It is necessary to eat one egg for breakfast. It contains vitamins A, V2, V5, V6, V9, V12, D, K, N, RR, as well as biotin, calcium, magnesium, zinc, selenium, copper, manganese iron - boiled eggs contain these useful vitamins.

It is important for people allergic to various foods to use hypoallergenic products for disease prevention!

The easiest for physical education is a long walk (3-5 km). In this case, "healthy" walking is very effective. There are several types of walking:

1. Strolling (simple walking).

2. Healthier (this includes Nordic walking with a cane).

3. Sporty walking.

Breath gymnastics. Inflating balloons is absolutely impossible for people with COVID-19. It is necessary to begin with exercises performed on the basis of light breathing and especially exhalation, and the patient should perform them continuously. In this case, it is necessary that tension does not appear in the chest, and saturation does not decrease.

During the acute period of the disease of COVID-19, the patient will have to learn the methods of breathing through the abdomen.

COVID-19 is related with cardiac involvement and cardiac inflammation. A latest cohort learn about from Germany on sufferers these days recovered from COVID-19 contamination proven cardiac involvement and ongoing myocardial infection in 78% and 60% of sufferers on cardiovascular magnetic resonance (CMR) imaging, respectively, unbiased of pre-existing comorbidity, severity and average trajectory of the acute sickness and time in view that the COVID-19 infection. In COVID-19 individuals, improved degrees of troponin alongside with elements of myocardial harm have been determined numerous days following the onset of fever.

High troponin degrees have been related with negative prognosis and expanded mortality rates. Interestingly, in a retrospective learn about from Wuhan inclusive of 187 COVID-19 patients, mortality used to be 8% in sufferers besides scientific records of cardiovascular sickness and everyday troponin T levels, 13% in sufferers with clinical records of cardiovascular sickness and regular troponin T levels, 38% in sufferers besides scientific records of cardiovascular sickness however multiplied troponin T stages and 69% for these with each clinical records of cardiovascular ailment and excessive troponin T levels.

Myocardial harm was once related with enormous upward jab in NT-proBNP, with a suggest NT-proBNP fee of seventy two pg/mL, in these who recovered and 800 pg/mL in COVID-19 sufferers who died. Thus, latest tips recommend the contrast of cardiac enzymes such as cardiac troponin, NT-proBNP, and BNP ranges in COVID-19 sufferers as these biomarkers are often expanded in myocarditis.

The incidence price of myocarditis may also vary from 4.5% to 30%. The proposed pathophysiological mechanisms of COVID-19 mediated myocardial damage is nevertheless below investigation. The direct contamination of myocardial cells via the adhesion of the virus in ACE2 receptors and viral replication inside the myocardium is the most distinguished

mechanism even though the immoderate immunological response brought on by using the SARS-CoV-2 may also trigger myocardial injury. In addition, myocardial harm may additionally be provoked with the aid of hypoxia and respiratory failure.

Other proposed reasons of myocardial involvement or injury consist of cardiac irritation which include myopericarditis and myocarditis. Clinically, COVID-19 sufferers introduced with tachycardia, 1/3 coronary heart sound, hypotension, tachypnea, and signs and symptoms of decreased cardiac output. An pressing cardiac manifestation of SARS-CoV-2 contamination is the improvement of fulminant myocarditis characterised through HF and ventricular dysfunction.

Usually, it seems two to three weeks following the viral infection. Furthermore, non-specific bizarre electrocardiographic findings have been discovered in folks with SARS-CoV-2 mediated myocarditis. The most normal ECG findings have been ST-segment modifications in 40% and cardiac arrhythmias in 38% together with atrial fibrillation, atrial flutter, sinus tachycardia and bradycardia, conduction blocks, untimely atrial and ventricular contractions.

Conclusion

COVID-19 can significantly impact the cardiovascular system in a variety of ways, from inflammation and reduced heart function to abnormal blood clotting and changes in blood pressure. Understanding these features of the virus's effects is crucial in providing comprehensive care for patients with COVID-19.

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