

Comment on “The importance of physical exercise during the coronavirus (COVID-19) pandemic”

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SUMMARY

Currently, many people have been infected by the Coronavirus disease (COVID-19) and presented cardiorespiratory symptoms caused mainly by the host immune system response and respiratory tract inflammation. So far, there is no effective treatment to fight off COVID-19 and, despite many daily speculations about new treatments and vaccines, in this article, we discuss the effectiveness of a cheap and scientific proven technique to treat and prevent several diseases. Many studies have shown the benefits of physical exercise in individuals who have practiced it routinely. This approach is a great strategy to improve people's cardiorespiratory capacity, inflammation system, and immune response. Due to the quarantine period, the practice of physical exercise at home can also be used to fight off COVID-19 and must be inserted into people's routines.

KEYWORDS: Coronavirus Infections. Betacoronavirus. Exercise.

INTRODUCTION

Coronavirus disease (COVID-19) has been spreading significantly worldwide. However, currently, several countries have presented a decrease in deaths and infections.¹ Although mortality and contamination curves have been reducing, there are still many symptomatic people presenting arthralgia, myalgia, pain, headache, cough, hypotension, and cardiological malfunction.^{2,3}

To fight off infection and symptoms generated by COVID-19 many clinical trials have been developed to test drugs⁴, such as hydroxychloroquine,⁵ lopinavir-ritonavir,⁶ and corticosteroid,⁷ but no differences

were found beyond standard care regarding mortality and time of symptomatology. Nevertheless, a recent study showed that remdesivir shortens the recovery time of adults infected by COVID-19⁸. It is important to mention that some side effects have been reported on people infected by COVID-19, mainly on cardiovascular function, leading to congestive heart failure, acute heart failure, syncope,⁹ and anemia.⁸ The biggest multicentric study about COVID-19 published presented that hydroxychloroquine or chloroquine used alone or associated with macrolide decreased survival and increased arrhythmias¹⁰.

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The main mechanism involved in COVID-19 pathogenesis is respiratory tract inflammation and host immunity system response.¹¹ Patients infected by COVID-19 commonly have lymphopenia, neutrophilia, thrombocytopenia, high systemic immune inflammation, and increased protein C and interleukin 6 levels. The initial condition of the patient and their immune response seem to be important factors that can harm organs' functioning.¹² Thus, as COVID-19 immunological and physiological processes have been elucidated, preventive strategies must be discussed to decrease the duration of symptoms and mortality in infected people.

Physical exercise emerges as a strategy to improve cardiorespiratory variables and endurance in people infected by COVID-19,¹³ and in those who are not infected.¹⁴ It is emphasized that individuals engaged in physical exercise programs have an increase of their cardiorespiratory levels, which is considered an important variable to protect against the emergence of several clinical conditions/diseases, such as hypertension, diabetes, and serious heart conditions.¹⁴ People with these characteristics are at higher risk of severe COVID-19 illness.¹⁵

Besides, older people, which are part of the risk group, present an increase of inflammatory cells, such as cytokines and interleukins 6.¹⁶ It has been shown that physical exercise may modulate the response of several inflammatory mediators.¹⁷⁻²¹ Adaptations in exercise parameters play an important role in generating benefits on immunity and inflammation systems.²² It is also highlighted that aerobic training has been used to prevent and reduce the risk of several conditions, such as endothelial dysfunction, obesity, diabetes, and high blood pressure.²³ As a result, we believe that this protective nonpharmacological approach can be an important strategy for decreasing symptoms and deaths caused by COVID-19.

Telehealth exercise protocols have been developed to help people who present different conditions.^{24,25} Besides, the use of video games to insert people in an immersive environment and stimulate them to practice exercise to improve quality of life has been used in older adults²⁶, children,²⁷ and individuals with different physical limitations.²⁸ These approaches could also be applied during the COVID-19 pandemic period because people worldwide must be in quarantine to avoid virus spreading^{29,30}. The social isolation period has been traumatic in different ways,³¹ stress,³² anxiety, and depression³³ have been experienced by several people. Exercise can be excellent to improve these symptoms³⁴ and should be stimulated to be performed at home during this tough time. Considerations about the opening of gyms and public spaces for the practice of exercise must be done with caution because there can be an increase in infections.

Although there is no vaccine to fight off COVID-19, thinking in the long term, since physical exercise has also been related to improving the effects of the vaccine,³⁵ it would be important to start preparing for this time, improving antibody response by exercising. Physical exercise must be considered a preventive strategy to fight off COVID-19.

CONCLUSION

Many people have been suffering because of the routine changes caused by the quarantine, deaths reported on TV, speculations about new treatments, risk of losing their jobs, and no prediction about the end of the pandemic. Physical exercise is a cheap and easy strategy that should be encouraged during the COVID-19 pandemic because it has been worthy to treat and prevent many cardiorespiratory and physical manifestations developed by people.

RESUMO

Atualmente, muitas pessoas ainda têm sido infectadas pelo Coronavírus (COVID-19) e apresentado sintomas cardiorrespiratórios gerados principalmente pela resposta do sistema imune do hospedeiro e inflamação do trato respiratório. Até agora, não existe nenhum tratamento efetivo para combater o COVID-19 e apesar de muitas especulações diárias sobre novos tratamentos e vacinas, neste artigo, nós discutimos sobre a efetividade de uma técnica barata e cientificamente comprovada para tratar e prevenir diversas doenças. Muitos estudos têm demonstrado os benefícios do exercício físico em indivíduos que tem praticado de forma rotineira. Esta abordagem é uma excelente estratégia para melhorar a capacidade cardiorrespiratória, sistema inflamatório e resposta imune. Devido ao período de quarentena, a prática de exercício físico em casa pode também ser usada para combater o COVID-19 e deve ser inserida na rotina das pessoas.

PALAVRAS-CHAVE: Infecções por Coronavírus. Betacoronavirus. Exercício físico.

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