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Original Article

Efficacy of tadalafil on improvement of men with erectile dysfunction caused by COVID-19: A randomized placebo-controlled trial

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KEYWORDS

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Abstract *Objective:* According to the high prevalence of COVID-19 and the subsequent risk of men's sexual health, we decided to investigate the efficacy of tadalafil on improvement of men with erectile dysfunction caused by COVID-19.

Methods: In this study, 70 outpatients who were recovered from COVID-19 without acute respiratory distress syndrome with negative polymerase chain reaction test and a complaint of erectile dysfunction were divided into two groups: 35 patients who received tadalafil 5 mg daily and 35 who received placebo. For each patient, basic assessment of sexual function was performed using the 5-item version of the International Index of Erectile Function (IIEF-5) questionnaire. Then, treatment was started from 2 months after complete recovery of COVID-19 with negative polymerase chain reaction test for 3 months. At the end of the treatments, the patients were re-evaluated for sexual function using the complete version of IIEF questionnaire. Finally, the results before and after treatment in the intervention group were compared with those of the control group.

Results: Treatment with both tadalafil and placebo improved the patients' sexual function criteria compared to the baseline. However, this improvement was significantly higher in the intervention group with tadalafil than the control group with placebo ($p < 0.05$).

Conclusion: Daily administration of tadalafil 5 mg seems to be effective and safe for improvement of erectile dysfunction caused by COVID-19.

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reducing fibrosis. Therefore, administration of this drug may, on the one hand, improve pulmonary fibrosis and, on the other hand, improve the ED caused by COVID-19 [14]. In addition, the results of our study confirm that daily administration of tadalafil 5 mg can improve ED caused by COVID-19. Patients in the intervention group who were treated with tadalafil had a significant improvement in sexual function parameters based on the complete version of IIEF questionnaire including erectile function, orgasm function, libido, sexual satisfaction, and overall satisfaction compared to those in the control group. However, patients in the control group showed less improvement of ED in the follow-up, which could be due to the role of psychological factors or reduction in the process of systemic inflammation over time.

The limitations of our study were the low sample size and impossibility of long-term follow-up. In addition, our study did not include another control group of those experiencing ED without a history of COVID-19 to further elucidate whether tadalafil has greater instead of worse efficacy between COVID-19 ED and regular ED. In addition, we could differentiate only organic ED from psychological ED, but we could not able to differentiate the other causes of ED.

5. Conclusion

Daily administration of tadalafil 5 mg seems to be effective and safe for improvement of ED caused by COVID-19. However, in the future, further studies are suggested with larger sample size and longer follow-up to confirm our results.

Author contributions

Study concept and design: Seyedmohammad Kazemeyni, Mohammadali Sadighi, Iman Shamohammadi.

Data acquisition: Iman Shamohammadi, Tara Hasanzadeh.

Data analysis: Iman Shamohammadi, Alireza Dizavi.

Drafting of manuscript: Tara Hasanzadeh.

Critical revision of the manuscript: Iman Shamohammadi.

Conflicts of interest

The authors declare no conflict of interest.

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