

# Pharmacological treatment during CoViD-19 and mental health issues

## *Trattamento farmacologico durante CoViD-19 e problemi di salute mentale*

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**SUMMARY.** Infection outbreak has been prevalent since previous decades. The impact of infection outbreak not merely limited to physical suffering but grounded for massive mental health issues. The fear of getting contagion and persistent exposure to diverse medication and vaccination contribute enormously to develop mental health issues among people. During previous infection treatment with diverse vaccination and antiviral agent, the common mental health issues found to be a mood disorder, delirium, schizophrenia, and psychotic symptoms. Cumbersomely, it is almost impossible to treat mental health issues during the pandemic with the help of only pharmacological availability. Hence psychological intervention is also important to ameliorate better consequences. The current study highlights the impact of CoViD-19 related diverse medication and vaccination on the mental health of the people.

**KEY WORDS:** CoViD-19, infection outbreak, mental health, pharmacological treatment, psychological issues.

**RIASSUNTO.** L'epidemia da contagio ha rappresentato un'esperienza ricorrente sin dai precedenti decenni. L'impatto di un'epidemia da contagio non si limita alla sola sofferenza fisica, ma comporta anche enormi problemi di salute mentale. La paura di contrarre il contagio e l'esposizione continua a diversi farmaci e vaccini contribuiscono enormemente a sviluppare problemi di salute mentale nelle persone. Nel caso di precedenti trattamenti di contagi con diverse vaccinazioni e agenti antivirali, i problemi di salute mentale comuni sono risultati essere disturbo dell'umore, delirio, schizofrenia e sintomi psicotici. Risulta quindi evidente che è quasi impossibile trattare i problemi di salute mentale durante una pandemia con l'aiuto della sola farmacologia. Quindi l'intervento psicologico è importante per ottimizzare i risultati positivi delle cure. Lo studio qui presentato evidenzia l'impatto dei diversi farmaci e vaccinazioni correlati al CoVid-19 sulla salute mentale delle persone.

**PAROLE CHIAVE:** CoViD-19, focolaio di infezione, problemi psicologici, salute mentale, trattamento farmacologico.

## INTRODUCTION

Infection outbreak has been prevalent since previous decades. The impact of infection outbreak not merely limited to physical suffering but grounded for massive mental health issues<sup>1-4</sup>. The fear of getting contagion and persistent exposure to diverse medication and vaccination contribute enormously to develop mental health issues among people. During previous infection treatment with diverse vaccination and antiviral agent, the common mental health issues found to be a mood disorder, delirium, schizophrenia, and psychotic symptoms. Cumbersomely, it is almost impossible to treat mental health issues during the pandemic with the help of only pharmacological availability. Hence psychological intervention is also important to ameliorate better consequences. The current study highlights the impact of CoViD-19 related diverse medication and vaccination on the mental health of the people.

ing used to stop the spread of infection. Literature is enriched with the evidence-based studies that highlighted the magnitude of neuropsychiatric complication prior to and after the pandemic condition<sup>5-7</sup>. Penciling and quinolines reported being effective antibiotics for the management of infection spread. According to US nested case-control recommendations, persistent antibiotic exposure, predominantly pencilling & quinolines are associated with anxiety and depression<sup>8</sup>.

Antivirals, protease inhibitors, antimalarial, monoclonal antibody and corticosteroids were more common drug that has been used to stop the spread of CoViD-19<sup>9</sup>. Although these medications found to be least effective for the management of infection outbreak, hence persistence exposure to medication and vaccination lead to many psychological and mental health issues.

## Remdesivir

Remdesivir antiviral has been used effectively during Ebola virus and highly touted as an effective antiviral drug for the CoViD-19 infection. According to recent data,

## MEDICATION AND VACCINE DURING CoViD-19

As long as the vaccination of CoViD-19 has not been discovered, however many vaccinations and medications are be-

remdesivir has a potent in-vitro activity to fight against CoViD-19. Remdesivir poses high selectivity for viral polymerases, hence considered least toxic for humans<sup>9</sup>. Finding of the cohort studies depicted the 68% improvement among CoViD-19 patients after the administration of remdesivir<sup>10</sup>. Hence according to literature, the direct treatment through antiviral drugs including remdesivir leads to depression, fatigue, anxiety and poor quality of life<sup>11</sup>. These mental health issues can adversely affect the health of the patient and survivors of CoViD-19 even after the pandemic crises. Hence the considerable attention should be given to control the mental health impact of CoViD-19.

### Lopinavir/ritonavir(LPV/r)

These protease inhibitor poses the antiviral combinations, which have been effectively used to treat HIV infection. Eighty trials are registered to investigate the effectiveness of lopinavir to treat CoViD-19<sup>9</sup>. The findings of the retrospective study depicted that the LPV/r is an effective antiviral drug against SARS-CoV-2. Though the affectivity of LPV/r is less than remdesivir. The open-randomised study depicted that LPV/r failed to reduce the mortality rate among 199 CoViD-19 patients<sup>12</sup>. According to the previous study the antiretroviral agent used to treat HIV often cause delusion, dizziness, anxiety, and nightmare<sup>13</sup>. The patient may survive through infection but develop long-lasting effects of mental health issues. Unfortunately, the significance of physical health is still the primary concern of the health care policies. Therefore, the need for mental and psychological health is still considered the least important. The health care staff must ensure the protection of mental health during any health crises, pandemic or disaster.

### Oseltamivir

Oseltamivir is a neuraminidase inhibitor used to treat influenza infection. During CoViD-19, it has been used to treat the flu-like symptoms. Eighteen studies including salico assessment, retrospective and in vitro studies illustrated that Oseltamivir is not an effective medication to treat the symptoms of CoViD-19<sup>14</sup>. According to recent findings, oseltamivir caused nausea, behavioural issue, delirium, convulsion, panic attacks, loss of consciousness and depressive mood<sup>15</sup>. As mentioned earlier oseltamivir is not an effective medication but still used to treat CoViD-19 infection, which can leave a detrimental effect. The test of any medication must be ensure before its application so that only beneficial results can be achieved.

### Favipiravir

Favipiravir is an RdRp inhibitor (RNA dependent RNA polymerase). It has been used to treat influenza in China and found to be effective in blocking the replication of bunyavirus, filovirus and arenavirus<sup>16</sup>. The combination of favipiravir and phosphoribosylated depicted potent in vitro activi-

ty against SARS-CoV-2<sup>17</sup>. Around 32 studies have been carried out to investigate the impact of this drug to reduce the infection of CoViD-19. The findings of the multicenter trial in Japan depicted no significant benefit of favipiravir in the management of CoViD-19<sup>18</sup>. The literature suggested that persistence use of favipiravir leads to neuropsychiatric complication among patients<sup>19</sup>.

### Ribavirin

Ribavirin is commonly used to treat the respiratory syncytial virus and hemorrhage fever. It is also being used to treat the spread of CoViD-19. No empirical study suggested its affectivity to control the spread of infection outbreak. Ribavirin found to be associated with depressive symptoms<sup>20</sup>.

Some other medications such as protease inhibitors, anti-malarial, monoclonal antibody and corticosteroids were also used to control the spread of CoViD-19. The effectivity of these drugs is still questionable for the management of CoViD-19. However, it can be assumed that the impact of these drugs can be harmful to the mental health of people.

### Vaccine

Vaccination has been very effective to control the previous infection outbreaks. However, the side effects of vaccination cannot be overlooked. The persistent exposure to the previous vaccine leads to many mental health issues among people. The most common mental health issues are anxiety, depression, fear, frustration, delusions, hallucination and anorexia nervosa<sup>1</sup>. The FDA approved vaccination for CoViD-19 in December 2020. Hence mRNA1273, COVAX-19, bac-TRL-spike, Covaxin (BBV152), ZyCoV-D, SCB-2019, GX-19 and DNA plasmid to reduce the risk of CoViD-19 will be available in the upcoming year<sup>21</sup>. Similarly the Lentiviral Minigiene and pathogen-specific aAPC vaccine is expected to be available in 2024<sup>22</sup>. However the application of this vaccination may be detrimental for the mental health of the people, therefore should be used with precautions. The extensive testing and to ensure the efficacy and safety is mandatory to reduce the risk for mental health issues.

### CONCLUSIONS

The medication and vaccination during infection outbreak are very pivotal, hence pose some limitation. The proper testing should be carried out on animal's subjects prior to its implications on a human being to elevate the adverse consequences. The mental health during crises is very crucial to maintain as it is the sole criteria for the re-establishment and re-generating the prosperity of the community.

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