

Long-Term Care Updates

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Utilization of oral antivirals for COVID-19 in nursing homes



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Introduction

The COVID-19 pandemic placed the most vulnerable populations (i.e., those who are advanced in age, have multiple comorbidities, are immunocompromised, or living in communal facilities) at risk for severe disease, hospitalizations, and death.¹ Many vulnerable patients reside in nursing home facilities and have multiple comorbidities that lead them to be immunocompromised or at higher risk of severe COVID-19 infections.² It is imperative for these patients to receive effective vaccines and early treatment to reduce severity of disease and complications. Although variations of the COVID-19 vaccine have been received by many of these residents, there is still concern regarding the best treatment for an active infection.³ Often times, the course of disease is more severe in this population and may lead to critical outcomes and mortality. Because of their communal styles, there is also greater concern for COVID-19 outbreaks within the nursing home facilities.²

Throughout the pandemic, several treatment options for COVID-19 have received emergency use authorizations and/or FDA approval. Paxlovid is a combination medication of nirmatrelvir and ritonavir that has been effective in the treatment and management of COVID-19. It is an anti-viral medication that is useful for mild to moderate COVID-19 symptoms. Although not a cure, Paxlovid has shown success as a supportive therapy in reducing viral replication, hospitalizations, and deaths related to COVID-19.⁴ Due to its relative ease of use, oral formulation, and low cost by comparison to intravenous (IV) therapy, this medication is thought to be a breakthrough for reducing the burden of COVID-19 related illnesses and deaths, especially within the populations most at risk for progression

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to severe disease and death.⁵ Molnupiravir has also been introduced as an alternative oral antiviral medication that demonstrates effectiveness in reducing symptom duration by creating mutations in the viral RNA that leads to death of the virus.⁵ Remdesivir, another frequently used treatment, is an IV administered pro-drug that mimics the nucleoside adenosine. Once it binds to the viral RNA polymerase, replication is obstructed, and the viral RNA transcript is terminated before it becomes useful. Success has been seen with remdesivir in aiding recovery in mild to moderate outpatient cases of COVID-19.⁵ Additionally, although largely replaced by oral options, monoclonal antibodies have been used as supportive treatment of COVID-19 symptoms not requiring hospitalization by targeting and preventing viral entry into cells. Monoclonal antibodies have been shown to reduce deaths in those infected with COVID-19.⁶

Treatment Guidelines

Current guidelines for the treatment of adults with COVID-19, experiencing mild to moderate symptoms not requiring hospitalization but at risk for progression to severe outcomes, recommend the use of Paxlovid or remdesivir, with molnupiravir as an alternative. The use of monoclonal antibodies is no longer recommended due to the dominant strain of COVID-19 in the United States being the Omicron variant and the observed lack of efficacy. Molnupiravir is recommended as an alternative when Paxlovid or remdesivir are unavailable or inappropriate, but not as a first line agent.⁸ There are no specific recommendations for nursing home residents or elderly adults outside of those listed above. These recommendations only reflect outpatient treatment and may be subject to change as new variants emerge and treatment options are updated.⁵ See table I for treatment guidelines.^{5,8}

Table I: Recommendations for non-hospitalized adults with mild to moderate COVID-19 symptoms at risk for progression to severe disease⁵

Treatment	Initiation Timeframe	Regimen
Molnupiravir (Lagevrio)	Within 5 days of symptom onset	800 mg orally twice daily for 5 days
Nirmatrelvir/ritonavir (Paxlovid)	Within 5 days of symptom onset	Nirmatrelvir 300 mg/ ritonavir 100 mg orally twice daily for 5 days (Dose adjustment or discontinuation is necessary in renal insufficiency)
Remdesivir (Veklury)	Within 7 days of symptom onset	200 mg IV once on day 1, 100 mg IV daily for 2 days
Monoclonal Antibodies	Not recommended	Not recommended

Clinical Evidence

Despite current guidelines, there is an underutilization of Paxlovid and molnupiravir within nursing home communities. This is due to various reasons, including difficulties with access, changes in recommendations, cost concerns, and unfamiliarity or hesitancy of providers or patients.⁷

A recently published observational study authored by researchers at Harvard T.H. Chan School of Public Health included 15,092 long-term care facilities. The trends for use of Paxlovid, molnupiravir, or monoclonal antibodies to treat COVID-19 were observed within the context of nursing homes listed in the Prevention National Healthcare Safety Network (NHSN) Nursing Home COVID-19 database. Data from the Centers for Disease Control and Prevention (CDC) were also collected. These sources were used to identify the number of residents treated with either an oral antiviral or monoclonal antibody for COVID-19 and to track the number of new weekly cases of COVID-19 from May 2021 to December 2022. Treatment rates, which included all three forms of treatment, were calculated by dividing those treated by the number of new cases. To best estimate new weekly cases, a moving average of 6 weeks was applied. Multiple linear probability regression models were used to compare 13,878 facilities and their reported treatment usage. These facilities reported at least one case of COVID-19 and were located in a county with other nursing homes to use as comparators. The total number of COVID-19 cases was 763,340 and of those, only 13,066 residents received treatment, revealing an overall treatment rate of 17.8% (95% CI, 17.4%-18.3%). During November 2021, the moving average for treatment reached its peak at 32.7% (95% CI, 30.5%-34.8%) of residents receiving one of the treatments. At this peak, the number of new COVID-19 cases decreased. At the end of the trial, the average treatment reported was 24.5% (95% CI, 23.3%-25.7%).⁷

Overall, by 2022, oral treatments were more commonly used than monoclonal antibodies, with the majority of the oral treatments being Paxlovid (61.1%). Molnupiravir was used in 18.2% of the treatments. Although treatment utilization did increase during the duration of the study, 41% of facilities still reported no use of any treatment regimen by the end of the observation period in 2022. Adjustments were performed to further explain the variables related to the differences in use of treatment between nursing homes. Factors that appeared to influence the likelihood of increased use of treatment included larger facilities with higher quality ratings, more direct care hours per resident, an affiliated geriatrician, higher overall vaccination rates for both staff and residents, greater average age of residents, and higher acuity levels. It was less likely for facilities to use treatments if they were for-profit and had higher numbers of residents that were non-white and Medicaid recipients. The authors concluded that the results were suggestive of structural barriers contributing to the variations observed between treatment use at different facilities. However, the results are limited by the inability to determine who was eligible to receive oral and monoclonal treatments and the nature of the observational design.⁷

Conclusion

COVID-19 is still present and adequate management is necessary, especially within the vulnerable community. Nursing homes are tasked with caring for aging residents while preventing outbreaks and hospitalizations.³ Whether it is due to social demographics causing accessibility concerns or hesitancy by providers or patients, there is consensus that approved COVID-19 treatments are not being utilized to their full potential within nursing home communities.⁷ Evidence has shown that Paxlovid and molnupiravir have decreased hospitalizations and deaths among the nursing home population.⁵ Increasing utilization of oral antivirals could help decrease the burden on nursing home staff and residents when combatting COVID-19 and give rise to better overall outcomes.

References:

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