

# Future of COVID-19 Treatment Without Vaccine and Painful Needles

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Ever since the beginning of COVID-19 Pandemic, researchers from across the world have been investigating different options for the treatment of SARS-COV-2. This is critical even after two years from the start of pandemic due to different variants resulting in new waves of this virus spreading globally. In this regard, December 22 and 23rd, 2021 are landmark days, when FDA granted authorization to Pfizer's Paxlovid and Merck's Molnupiravir (COVID-19 Oral Antiviral products) for emergency use (EUA) [1]. The director of the FDA's Center for Drug Evaluation and Research Patrizia Cavazzoni, M.D., described this an enormous step to tackle this global pandemic," [1].

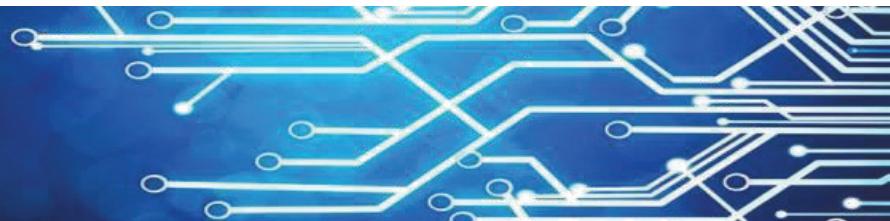
Since the authorization of Molnupiravir, Merck has an estimated \$952 million of its Covid-19 treatment pill Molnupiravir sold in the fourth quarter, and said expected to have higher number of sales, reportedly from 5-6 Billion in 2022 [2]. The clinical trials of Molnupiravir started in October 19, 2020 and anticipated study completion date is May 5, 2022 [3]. The initial results show some potential by minimizing the risk of COVID-19 patients' hospitalization by 30% but significantly reducing the risk of death by 90% [2].

Another recent invention from MIT engineers [4] provided another option of delivering mRNA vaccine to patients without the use of vaccine or needles. This invention is targeted for those people who are reluctant

to take COVID-19 vaccine due to discomfort of being jabbed or inserting needles inside them. They have invented a tiny device, "the size of a large pill, encased in gelatin and shaped like the shell of a tortoise. It carries a needle that is engineered to only lance out when the device's flat section sits flush with the lining of the stomach [4]." So far the study is in initial phase with some trials conducted on animals, but the results are so far inconclusive.

Despite these significant developments in recent months, either Molnupiravir or Paxlovid are not authorized for COVID-19 pre-exposure or post-exposure prevention, and the need for vaccination is not substituted by any of these. It is still extremely critical for everyone to get vaccinated against COVID-19, despite the option of availing these medications [5]. Jones et. al. worked on creating an AI based device that can remotely monitor the COVID-19 patient using thermal imaging device and equipped with automated pill consumption confirmation [6]. Jones and Azeem, 2021 also used this device to link the captured data to automate COVID-19 Supply Chain Therapeutics for at-risk communities [7].

Even with all of this, it is extremely essential that scientists and researcher should come up with alternate treatment of COVID-19, which are less painful and effective against all variants, and the developments like oral



antiviral pills or needleless administration of vaccines provide a lot of optimism.

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