Коронавируст халдвар (COVID-19)-ын эмчилгээний сонголтуудын талаарх тойм өгүүлэл

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Түлхүүр үг: COVID-19, SARS-CoV-2, ремдесивир, азитромицин, фавипиравир, кортикостеройд

2020 оны 1-р сарын 1-ний өдрөөс 2020 оны 11-р сарын 16 өдрийг хүртэлх хугацаанд коронавируст халдвар Ковид-19 эмчилгээний талаар (Pubmed.gov) хайлт хийхэд 2015 судалгааны ажил, үүнээс ремдесивир эмийн тухай судалгааны талаарх өгүүлэл одоогоор 685 хэвлэгдсэн байна.Mukarram Jamat Ali нарын 2020 оны 7-р сарын 20-нд “Frontiersin Medicine” сэтгүүлд хэвлэгдсэн Ковид-19 халдварын эмчилгээний сонголтуудын талаарх тойм өгүүллээс хураангуйлан танилцуулж байна.

Энэхүү судалгаанд SARS-CoV, MERS-CoV, SARS-CoV-2 өвчний тархалт эхэлснээс хойш эмчилгээний талаар PubMed, EMBASE, Google Scholar-д нийтлэгдсэн эмнэлзүйн тохиолдол, ретроспектив дүн шинжилгээ, in vitro судалгаануудыг нарийвчлан судалж харьцуулан, үр дүнтэй байж болох эмчилгээг тодорхойлохыг зорьсон байна. Уг судалгаагаар COVID-19 эмчилгээний дараах эмийн сонголтууд болон тэдгээрийн үйлдлийн механизмыг Хүснэгт 1-д товч нэгтгэн харууллаа.

Хүснэгт 1. COVID-19 эмчилгээний дараах эмийн сонголтууд болон тэдгээрийн үйлдлийн механизм

Эмүүд	Үйлдлийн механизм	Насанд хүрэгсдэд хэрэглэх тун	Эсрэг заалт	Сөрөг нөлөө	Ишлэл
1-Choloroquine (CQ) / Hydroxy-Choloroquine (HCQ)	Вирүс эсэд нэвтрэх, гарахыг хориглоно. Вирүсийн уургийн нийлэгжилтийг саатуулна.	Ууж хэрэглэнэ, HCQ 400мгхоногт, 2 удаа × 2 тун, дараа 400мгөдөр бүр × 4 хоног (5 тун)	- CQ/HCQ and 4-аминохинолин хэт мэдрэгшил - торлогийн болон харах талбайн эмгэг илрэх	- CQ/HCQ эмчилгээний индекс хумигдмал - QT интервал уртсах,аритмын шалтгаан болох ясны чөмөг дарангуйлах - уналт - ретинопати - миопати	(2–13)
2- Азитромицин	Бактерийн уургийн нийлэгжилтийг дарангуйлах болон зарим вирүсийн эсрэг үйлдэлтэй	Ууж хэрэглэнэ, 500 мг × 1, дараа нь 250 мг × 4 (нийт 5 хоног)	- Грависын миоастени - гипокалеми - гипомагнеземи	- QT интервал уртсах	(14–16)
3- Ремдесивир	Аденозин аналог; вирүсийн геномд нэгдсэнээр шинээр үүсч буй вирүсийн РНХ гинжийг хэлбэржихээс өмнө зогсоодог	судсаар, 200 мг × 1, дараа нь 100 мг/хоног × 9 хоног (10 тун)		- трансаминазууд-ын түвшин ихсэх - Бөөрний гэмтэл	(17–24)

Эмүүд	Үйлдлийн механизм	Насанд хүрэгсдэд хэрэглэх тун	Эсрэг заалт	Сөрөг нөлөө	Ишлэл
4- Лопинавир/ Ритонавир	1-р хэлбэрийн ХДХВ-ийн протеазыг дарангуйлдаг; ХДХВ-1-ийн боловсролт, улмаар халдварлах чадварыг зогсооно; SARS-CoV-2-т ижил	Ууж хэрэглэнэ, 400/100 мгХоногт 2 удаа × 10хоног		Түгээмэл : - ходоод гэдэс эвгүйрэх - Дотор муухайрах, бөөлжих Ноцтой: - панкреатит - элэг гэмтээх - Зүрхний дамжуулалтын алдагдал үүсэх	(25–36)
5- Favipiravir/ Фавипиравир	Вирүсийн РНХ хамааралт полимеразаг дарангуйлдаг	Ууж хэрэглэнэ, бөөр болон элэгний өвчний үед тунгийн зохицуулалт шаардлагатай		- Нейтродени - Суулгалт - Гиперурикеми - трансаминазуудын түвшин ихсэх	(37–43)
6- Рибавирин	Гуанизины нуклеозидын аналог, РНХ полимеразаг дарангуйлдаг; геномд орж вирүсийн удмын мэдээлэлд өөрчлөлт оруулж мутаци үүсгэдэг	Ууж хэрэглэнэ, 400 мгөдөрт 3 удаа (>50 мл/мин), 400 мг хоногт 2 удаа (50–30 мл/мин), 200 мг хоногт (<30 мл/мин) × 10 хоног	- жирэмсэн эмэгтэй - гемоглобины эмгэгтэй өвчтнүүд	- цус задралын анеми - третоген	(44–63)
7- Ivermectin/ Ивермектин	Шимэгчийн эсрэг эм;in vitroорчинд SARS-CoV2 репликаци зогсоодог нь вирүсийн РНХ-ын хэд дахин бууралтаар харагдсан			- арьсны тууралт - үе, булчингийн өвдөлт	(64–67)
8-иммуноглобулин	COVID-19-ийн эдгэрсэн өвчтөнүүдээс авсан эсрэг биетийг шинэ өвчтөнүүдэд хийхэд вирүсийг саармагжуулдаг			- улайлт - толгой өвдөх - сульдах - халуурах - бөөрний үйл ажиллагаа муудах - тромбоз - арритм	(68–76)
9- кортикостеройдууд	Кортикостеройдууд үрэвслийн эсрэг үйлдэлтэй, олон төрлийн цитокинууд (1L-1, 1L-6, 1L-8, 1L-12, TNFα) янз бүрийн нөлөө үзүүлдэг, эмгэг гэмтлийг бууруулдаг		- суурь халдвартай өвчтнүүд - ЧШ - АДИ	Богино хугацаанд хэрэглэх, аюултай гаж нөлөө байхгүй, харин урт хугацаанд хэрэглэхэд дараах нөлөө гарч болно: - АДИ - ЧШ - Остеопроз - жин нэмэх	(77–81)
10. Интерферон	Дархлалын тогтолцоог дэмждэг			- томуу төст хам шинж тухайлбалтолгой өвдөх, ядрах,сульдах - жихүүдэс хүрэх - халуурах	(82–91)

Эмүүд	Үйлдлийн механизм	Насанд хүрэгсдэд хэрэглэх тун	Эсрэг заалт	Сөрөг нөлөө	Ишлэл
11. Tocilizumab/ Токилизумаб	Хүний рекомбинант ИЛ-6 моноклон эсрэгбие; IL-6 рецептортой холбогддог	судсаар, 400 мг × 1	- уг эмийн найрлагад хэт мэдрэг хүмүүс - нейтропени (<500 cells/ micro L) эсвэл тромбоцитопени (<50,000 cells/ micro L) өвчтнүүдэд болгоомжлох	- амьсгалын дээд замд сүрьеэ төст үрэвслийг даамжруулдаг - назофрангит - толгой өвдөх - АДИ - Цусны үзүүлэт өөрчлөлт - элэг гэмтээх - Ходоод гэдэсний замын цоорол - хэт мэдрэгшлийн урвал	(92–102)

Эдгээр эмийн бэлдмэлээс Монгол улсад интерферон, рибавирин, ремдесивир, азитромицин, кортикостеройдууд бүртгэлтэй байна. Уг судалгаанаас үр дүн өндөр, Ковид-19 эмчилгээний удирдамжид заагдсан эм нь Ремдесивир болон кортикостеройдууд байна.

Ремдесивир**:** Ремдесивирийг 2020 оын 10-р сарын 22 өдөр Ковид-19 эмчилгээнд хэрэглэгдэхээр АНУ-ын Хүнс эмийн зөвлөлөөр (FDA) батлагдсан, одоогоор FDA баталсан цорын ганц эм бөгөөд Дэлхий нийтээрээ хэрэглэж байна., АНУ-ын Гилеад Сайнс компаний эрдэмтэд зохион бүтээж гаргаж авсанэм юм.

Ремдесивирэмийгхэдийгээр Эбола, Марбургийн вирүсийн халдварын эсрэг эмчилгээнд зориулж судалгаа шинжилгээ нь эхэлж байсан ч (17), РНХ агуулсан вирүсууд болох *Lassa virus, respiratory syncytial virus,SARS-CoV, MERS-CoV*зэрэг вирүсийнэсрэг үйлдэлтэй болох нь судалгаагаар нотлогдсон. Уг вирүсээр халдварлуулж, өвчний загвар үүсгэсэн хулганад Ремдесивир эм нь үр дүнтэй, өвчин эхлэхэд тухайн эмийг нэг хоног хэрэглэхэд уушигны үйл ажиллагаа сайжирч, уушгинд вирүсийн титр статистик ач холбогдол бүхий буурч байсан байна ($p < 0.0001$).Өвчний эхэн үеэс хойш 2 хоногийн дараа тарьсан үед вирүсийн титр нь мэдэгдэхүйц буурсан боловч хулганы эндэгдэл өндөр байв. Энэхүү судалгаагаар уушгины гэмтэл дээд цэгтээ хүрэхэд вирүсийн титрийг бууруулсан ч хулганы дархлааны хариу урвалыг зогсоож чадахгүй, харин ремдесивирийг өвчний эрт үед хэрэглэх нь хулганд илрэх шинж тэмдэг, нас баралтыг статистик ач холбогдол бүхий бууруулж ($p = 0.0037$) байна гэсэн дүгнэлтэд хүрсэн байна[18]. Бодит хугацааны ПГУ-ын шинжилгээгээр (хамар залгиурын арчдас дээр хийсэн) *SARS-CoV-2*батлагдсан өвчтөнд ремдесивир эмийг нэг өдөр хэрэглэхэд эмнэлзүйн эрс сайжрал ажиглагдсан тухай тохиолдол бүртгэгдсэн [19]. Ремдесивирийн anti-CoVүйлдлийн хүрээг тогтоох, санамсаргүй, давхар нууцлалтай туршилт судалгаа явагдсаар байна[20]. Тухайлбал энэхүү судалгаанд 308 хүн санамсаргүйгээр ремдесивир болон плацебо бүлэгт хуваарилагдан оролцсон байна. Өөрнэгэн III дахьшатны судалгаа нь давхар нууцлалтай, плацебо хяналттай судалгаагаар *SARS-CoV-2* халдварын амьсгалын замын хүнд хэлбэрийн шинж тэмдэг илэрсэн, эмнэлэгт хэвтэж буй 452 насанд хүрэгсдийг хамруулан ремдесивирийн аюулгүй, үр дүнтэй эсэхийг судалж байна[21].*in vitro* судалгаагаар ремдесивир *bat-CoVs* болон хүний *CoV*өсөлтийг дарангуйлсан болон[22] өөр нэг судалгаагаар *in vitro* орчинд ремдесивир болон хлорохин нь *SARS-CoV-2* –ийнэсрэг үр дүнтэй нь ажиглагдсан байна[23]. III шатны давхар нууцлалтай, плацебо хяналттай, санамсаргүй, эмнэлэгт хэвтэж буй Ковид-19 халдвартай өвчтнүүдийг хамруулсан эмнэлзүйн туршилт судалгаагаар плацебо бүлэгтэй харьцуулахад ремдесивир богино хугацаанд буюу өвчний 11-15 дахь хоногт эдгэрч байгаа нь тогтоогдсон байна [24].

Treatment options for COVID-19: A Systematic review

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Abstract

A total of 2015 articles about SARS-COV-2 and Covid-19 treatment including 685 articles about Remdesivir were published (Pubmed.gov) between January to November 2020.

Given the rapid spread so far and the new treatment modalities under consideration, the main focus lay on the repurposing of existing drugs, with several trials underway in attempts to find the most revolutionizing one.

It is a summary of review article about treatment options for Covid-19 treatment were published by Mukarram Jamat Ali (King Edward Medical University, Lahore, Pakistan), Amin H. Karim (Department of Cardiology, Baylor College of Medicine, Houston, TX, United States) et.al., in Frontiers in Medicine journal on July 20, 2020.

This study aimed to search and review various case reports, retrospective analyses, and in vitro studies published in PubMed, EMBASE, and Google Scholar regarding the treatment options used for SARS-CoV, MERS-CoV, and SARS-CoV-2 since its outbreak in an attempt to highlight treatments with the most promising results. The treatment options available for COVID-19 and their mechanisms of action are briefly outlined in Table 1.

Here, we have highlighted a few available antimicrobial agents that could be very effective in treating COVID-19; indeed, a number of trials are underway to detect and confirm the efficacy of these agents. After reviewing a number of studies and case reports, we conclude that remdesivir and hydroxychloroquine/ chloroquine with or without azithromycin are promising treatment options for patients with mild and moderate COVID-19. Remdesivir is available in Mongolia.

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