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COVID-19 Cases and Mortality Report Across Countries of the World, using USA as a Comparism Factor: An Update Report 18th to 24th of August, 2022.

Joseph Oyepata Simeon[1], Joseph Opeyemi Tosin[2], Moses Femi Daniel[3], Ariahu Emmanuel C[4]

[1]Departmennt of Pharmacology and Toxicology, Faculty of Pharmaceutical Sciences, Federal University, Oye–Ekiti, Ekiti State, Nigeria.
[2]Department of pharmacology, Faculty of pharmacy, Lead City University, Ibadan, Nigeria.
[3]May Institute Behavioral Health Services, Boston Massachusetts, USA.
[4]Department of Pharmaceutics, Faculty of Pharmaceutical Sciences, Bingham University, Karu, Nasarawa, Nigeria.

ABSTRACT

COVID-19 is still a virus of interest. It infectivity, causes, prognosis and implication is still not fully understood. Generally, percentage mortality compared to infection has significantly dropped. This study is a COVID-19 cases and mortality report across countries of the world using USA as a comparism factor: An update report 18th to 24th of August, 2022.

Material and Method: Cumulative data from one hundred and fifty three (150) countries and regions of the world were collected from the United Nations geoscheme from 18th to 24th of August, 2022. Results were collated and subsequently compared to the values obtained for the USA.

Result: There were high incidences and mortality reports in Asian region when compared to that of USA. European countries has a slight surge in infectivity, while Africa is relatively unbothered incidences and mortality report. Generally, the percentage mortality compared to reported cases is low.

Conclusion: there has been tremendious improvement in containing the spread, infectivity and mortality of the virus. More still needs to be done. The upsurge of the virus in Asia region poses a new challenge and fear of the possibility of a mutate with new consequences, while more needs to be done to understand why Africa has always been safe.

Keywords: Africa, America, continent, COVID-19, Europe, Nigeria, USA

Introduction

Coronavirus disease shocked the world and forces it to a standstill while the world is still grabbing with this reality and heavy losses there has been advent of several new strain (particularly Omicron) from its parent nucleus raising fear about the unknown consequences. Also the possibility further future strain has keep the globe in an unending fear. Coronavirus disease, commonly called COVID-19, is an infectious disease caused by the SARS-CoV-2 virus[1-4]

Most people who fall sick with COVID-19 will experience mild to moderate symptoms and recover without special treatment. However, some will become seriously ill and require medical attention[5-9]. The virus can spread from an infected person's mouth or nose in small liquid particles when they cough, sneeze, speak, sing or breathe. These particles range from larger respiratory droplets to smaller aerosols[10-13]. The economic and social disruption caused by the pandemic is devastating: tens of millions of people are at risk of falling into extreme poverty[14-17]. At some point, one or more humans acquired infection from an animal or laboratory leakage to affect humans, and those infected humans may have transmitted the original or mutated[18]. It can also be transmitted through contact with hands or surfaces that have been previously exposed by the virus and touch the body opening with the contaminated hands[19-20]. Coronaviruses (CoV) is among the family of viruses that cause illnesses ranging from less severe to more severe diseases. N CoV is a new variant that has not been previously identified in humans[21,22]. The new virus was subsequently named the "COVID-19 virus. The novel virus was first identified in Wuhan, a city in China, in December of 2019; an immediate lockdown in Wuhan and other surrounding cities failed to contain the outbreak, resulting in its spread to different parts of the word23-26. On 30 January 2020, The World Health Organization (WHO) declared an international Public Health Emergency on pandemics27 different strains of the virus have been discovered, most notable of which are the delta and the Omicron variants28. COVID-19 symptoms range from simple to life-threatening. Studies have shown that older persons are more likely to suffer from complications of the virus[29-30].

There is serious concern and study on the different waves caused by the pandemic. This may be due to weather conditions and predictable mutation[31-33]. There is the need to study these cases per country and region for the infectious and spreading ability of the various variants. Different work has been done on the demographics, nature and strength of the virus, and analyzing periodic information per time is also predicated in managing the trend[34-38]. This

study is a COVID-19 cases and mortality report across countries of the world using USA as a comparism factor: An update report 18th to 24th of August, 2022.

Material and Method

Study Area: Cumulative data from 18th to 24th of August, 2022 were obtained from United Nations Geoscheme and WHO (WHO 2022).

Methodology

One hundred and fifty three (150) nations from different continents and regions of the world was selected for this study. Data used were obtained from 2nd to 8th of September, 2022 from United Nations Geoscheme and WHO[19]. The Data obtained for these countriesover 7 days per 100000 populations, were analyzed and compared directlywith the values gotten for the USA. USA was used as a Comparison Factor (CF) or Oyepata Factor (OF) because it is a country with one of the best health systems and also has the highest COVID-19 cases with a relatively large population in the world.

Statistical Analysis

In this work markers as cumulative cases and cumulative cases of death per 1,000,000 population were analyzed against that of the USA. Bivariate analysis was used and a Chi-square test, to compare proportions of all variables. Country observations are scaled to represent a comparison of two countries similar in all other respects.

Result

There were high incidences and mortality reports in Asian region when compared to that of USA. European countries has a slight surge in infectivity, while Africa is relatively unbothered incidences and mortality report. Generally, the percentage mortality compared to reported cases is low.

Table 1: cases and death of COVID-19 across different countries of the world

S/N	Country, Other	Cases in 7 days	Deaths in 7 days	CPM	CPM/1813 (OF1)	DPM	DPM/9 (OF2)	CPM/DPM
1	USA	607,868	2,890	1813	1.00	9	1.00	0.48
2	Japan	1,182,686	1,993	9414	5.19	16	1.76	0.17
3	S. Korea	625,976	544	12187	6.72	11	1.18	0.09
4	Russia	313,209	612	2144	1.18	4	0.47	0.20
5	Taiwan	199,828	222	8357	4.61	9	1.03	0.11
6	Germany	210,361	639	2493	1.38	8	0.84	0.30
7	Italy	143,190	536	2376	1.31	9	0.99	0.37
8	France	119,109	328	1816	1.00	5	0.56	0.28
9	Hong Kong	63,417	58	8312	4.58	8	0.84	0.09
10	Australia	79,644	363	3046	1.68	14	1.54	0.46
11	Brazil	141,532	875	656	0.36	4	0.45	0.62
12	India	53,331	376	38	0.02	0	0.03	0.71
13	Chile	44,252	187	2272	1.25	10	1.07	0.42
14	Austria	31,560	44	3461	1.91	5	0.54	0.14
15	UK	24,252	524	353	0.19	8	0.85	2.16
16	Mexico	32,943	269	250	0.14	2	0.23	0.82
17	Indonesia	28,545	134	102	0.06	0	0.05	0.47
18	Poland	21,407	152	567	0.31	4	0.45	0.71
19	Serbia	24,612	102	2842	1.57	12	1.31	0.41
20	Greece	45,862	209	4447	2.45	20	2.25	0.46
21	Vietnam	18,154	7	183	0.10	0	0.01	0.04
22	Portugal	18,167	46	1793	0.99	5	0.50	0.25
23	Spain	18,944	352	405	0.22	8	0.84	1.86

24	Philippines	16,953	345	150	0.08	3	0.34	2.04
25	Malaysia	16,586	40	499	0.27	1	0.13	0.24
26	Romania	19,118	132	1008	0.56	7	0.77	0.69
27	Singapore	14,059	6	2363	1.30	1	0.11	0.04
28	New Zealand	15,024	64	3004	1.66	13	1.42	0.43
29	Czechia	10,935	54	1017	0.56	5	0.56	0.49
30	Peru	16,126	266	475	0.26	8	0.87	1.65
31	Thailand	11,660	190	166	0.09	3	0.30	1.63
32	Hungary	12,157	100	1265	0.70	10	1.16	0.82
33	Slovenia	9,181	18	4415	2.44	9	0.96	0.20
34	Ukraine	13,459	41	312	0.17	1	0.11	0.30
35	Belgium	10,284	38	879	0.48	3	0.36	0.37
36	Netherlands	7,627	11	443	0.24	1	0.07	0.14
37	Switzerland	15,390	6	1750	0.97	1	0.08	0.04
38	Iran	11,351	282	131	0.07	3	0.36	2.48
39	Israel	6,160	31	661	0.36	3	0.37	0.50
40	Argentina	15,150	61	329	0.18	1	0.15	0.40
41	Qatar	3,880	0	1382	0.76	0	0.00	0.00
42	Croatia	4,999	90	1234	0.68	22	2.47	1.80
43	Denmark	4,092	46	701	0.39	8	0.88	1.12
44	Sweden	4,635	55	453	0.25	5	0.60	1.19
45	Bulgaria	5,126	29	750	0.41	4	0.47	0.57
46	Azerbaijan	3,449	10	334	0.18	1	0.11	0.29
47	Jordan	3,946	5	379	0.21	0	0.05	0.13
48	Finland	5,772	10	1038	0.57	2	0.20	0.17
49	Canada	21,138	285	550	0.30	7	0.82	1.35
50	UAE	3,673	0	362	0.20	0	0.00	0.00
51	Bolivia	5,533	17	460	0.25	1	0.16	0.31
52	Brunei	0	0	0	0.00	0	0.00	#DIV/0!
53	China	2,413	0	2	0.00	0	0.00	0.00
54	Moldova	4,908	25	1223	0.67	6	0.69	0.51
55	Armenia	2,124	7	714	0.39	2	0.26	0.33
56	Kazakhstan	2,941	2	153	0.08	0	0.01	0.07
57	Afghanistan	1,283	6	31	0.02	0	0.02	0.47
58	Lebanon	3,115	16	461	0.25	2	0.26	0.51
59	Bangladesh	1,414	5	8	0.00	0	0.00	0.35
60	Slovakia	2,026	14	371	0.20	3	0.28	0.69
61	Ireland	1,916	9	379	0.21	2	0.20	0.47
62	Colombia	3,214	127	62	0.03	2	0.27	3.95
63	South Africa	1,487	23	24	0.01	0	0.04	1.55
64	Bahrain	1,343	2	734	0.40	1	0.12	0.15
65	Trinidad and Tobago	1,424	29	1010	0.56	21	2.29	2.04
66	Pakistan	1,835	19	8	0.00	0	0.01	1.04
67	Ecuador	2,927	30	161	0.09	2	0.18	1.02
68	Tunisia	1,069	5	88	0.05	0	0.05	0.47
69	Nepal	1,038	4	34	0.02	0	0.01	0.39

70	Myanmar	742	2	13	0.01	0	0.00	0.27
71	North Macedonia	1,270	22	610	0.34	11	1.17	1.73
72	Palestine	0	0	0	0.00	0	0.00	#DIV/0!
73	Estonia	1,106	4	833	0.46	3	0.33	0.36
74	Uruguay	1,925	10	550	0.30	3	0.32	0.52
75	Martinique	755	0	2015	1.11	0	0.00	0.00
76	Saudi Arabia	567	13	16	0.01	0	0.04	2.29
77	Iraq	1,316	3	31	0.02	0	0.01	0.23
78	Nigeria	372	0	2	0.00	0	0.00	0.00
79	Venezuela	701	5	25	0.01	0	0.02	0.71
80	Honduras	1,887	2	184	0.10	0	0.02	0.11
81	Norway	720	27	131	0.07	5	0.54	3.75
82	Laos	578	0	77	0.04	0	0.00	0.00
83	Mali	172	0	8	0.00	0	0.00	0.00
84	Barbados	842	7	2922	1.61	24	2.70	0.83
85	Tonga	944	0	8716	4.81	0	0.00	0.00
86	Jamaica	693	15	232	0.13	5	0.56	2.16
87	Zambia	112	0	6	0.00	0	0.00	0.00
88	Kuwait	353	0	80	0.04	0	0.00	0.00
89	Sri Lanka	437	24	20	0.01	1	0.12	5.49
90	Guinea-Bissau	9	1	4	0.00	0	0.05	11.11
91	Cyprus	1,809	6	1475	0.81	5	0.54	0.33
92	Cuba	368	0	33	0.02	0	0.00	0.00
93	Iceland	338	34	977	0.54	98	10.92	10.06
94	Guinea	0	0	0	0.00	0	0.00	#DIV/0!
95	Haiti	248	0	21	0.01	0	0.00	0.00
96	Malta	159	2	358	0.20	5	0.50	1.26
97	Ivory Coast	218	2	8	0.00	0	0.01	0.92
98	Aruba	96	0	891	0.49	0	0.00	0.00
99	Mauritius	119	2	93	0.05	2	0.17	1.68
100	Ethiopia	108	1	1	0.00	0	0.00	0.93
101	Kyrgyzstan	179	0	26	0.01	0	0.00	0.00
102	Zimbabwe	62	3	4	0.00	0	0.02	4.84
103	Guyana	136	0	171	0.09	0	0.00	0.00
104	Andorra	0	0	0	0.00	0	0.00	#DIV/0!
105	Montserrat	25	0	5001	2.76	0	0.00	0.00
106	Burundi	224	0	18	0.01	0	0.00	0.00
107	Lesotho	0	0	0	0.00	0	0.00	#DIV/0!
108	Togo	106	1	12	0.01	0	0.01	0.94
109	Syria	111	1	6	0.00	0	0.01	0.90
110	Maldives	68	1	121	0.07	2	0.20	1.47
111	Kenya	117	1	2	0.00	0	0.00	0.85
112	Cambodia	132	0	8	0.00	0	0.00	0.00
113	Libya	117	1	17	0.01	0	0.02	0.85
114	Mozambique	76	0	2	0.00	0	0.00	0.00
115	Senegal	111	0	6	0.00	0	0.00	0.00
116	Malawi	63	0	3	0.00	0	0.00	0.00

117	Botswana	0	0	0	0.00	0	0.00	#DIV/0!
118	Monaco	22	0	552	0.30	0	0.00	0.00
119	Sudan	55	0	1	0.00	0	0.00	0.00
120	Fiji	61	1	67	0.04	1	0.12	1.64
121	Rwanda	35	0	3	0.00	0	0.00	0.00
122	Sao Tome and Principe	17	0	75	0.04	0	0.00	0.00
123	CAR	0	0	0	0.00	0	0.00	#DIV/0!
124	Bahamas	49	0	122	0.07	0	0.00	0.00
125	Liberia	151	0	28	0.02	0	0.00	0.00
126	Anguilla	32	1	2092	1.15	65	7.26	3.13
127	Madagascar	11	0	0	0.00	0	0.00	0.00
128	Papua New Guinea	11	0	1	0.00	0	0.00	0.00
129	Chad	47	0	3	0.00	0	0.00	0.00
130	Sint Maarten	10	0	228	0.13	0	0.00	0.00
131	Cabo Verde	21	0	37	0.02	0	0.00	0.00
132	Equatorial Guinea	18	0	12	0.01	0	0.00	0.00
133	Gabon	14	0	6	0.00	0	0.00	0.00
134	Yemen	4	0	0	0.00	0	0.00	0.00
135	Mauritania	12	1	2	0.00	0	0.02	8.33
136	Niue	10	0	6061	3.34	0	0.00	0.00
137	Eritrea	6	0	2	0.00	0	0.00	0.00
138	Sierra Leone	3	0	0	0.00	0	0.00	0.00
139	Caribbean Netherlands	4	0	150	0.08	0	0.00	0.00
140	Eswatini	14	0	12	0.01	0	0.00	0.00
141	Benin	174	0	14	0.01	0	0.00	0.00
142	Cameroon	685	2	24	0.01	0	0.01	0.29
143	Comoros	30	0	33	0.02	0	0.00	0.00
144	Costa Rica	5,094	16	980	0.54	3	0.34	0.31
145	DRC	123	9	1	0.00	0	0.01	7.32
146	El Salvador	1,242	3	189	0.10	0	0.05	0.24
147	Falkland Islands	5	0	1351	0.75	0	0.00	0.00
148	Georgia	12,595	6	3171	1.75	2	0.17	0.05
149	Ghana	123	0	4	0.00	0	0.00	0.00
150	Turkey	26,220	120	304	0.17	1	0.15	0.46

Key:

Data used were obtained from WHO/World meters from 18th to 24th of September, 2022 Figures obtained for the USA were used in determining the comparison factor (CF) or Oyepata Factor which is a ratio of the figure obtained to that of a particular country population divided by that of the USA.

Values of OF1 (or CF1) and OF2 (or CF2) represent the case/incidence and mortality index.

Factor of more than 1 = very high infection and mortality index

Factor of approximately 1 = high infection and mortality index

Factor of ≤ 1 but ≥ 0.5 = moderately high infection and mortality index

Factor of ≤ 0.5 but ≥ 0.1 = low infection and mortality index

Factor of <0.1 = very low infection, mortality and recovery index

CPM means cases per million

DPM means death per million

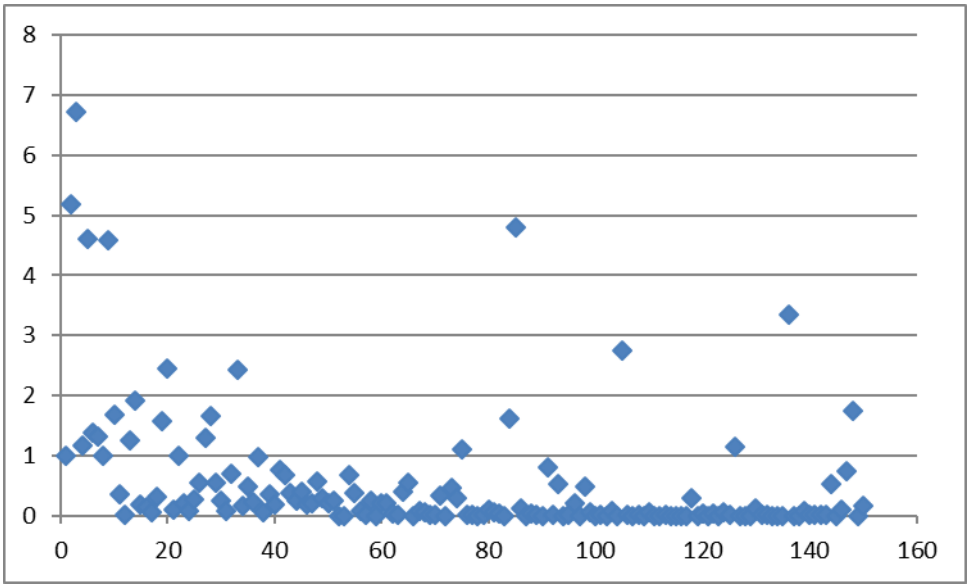

Figure 1: Graph showing comparison factor per country relative to USA 18th to 24th of August, 2022. The X-axis representsthe Comparison (Oyepata) factor, Y-axis represent countries.

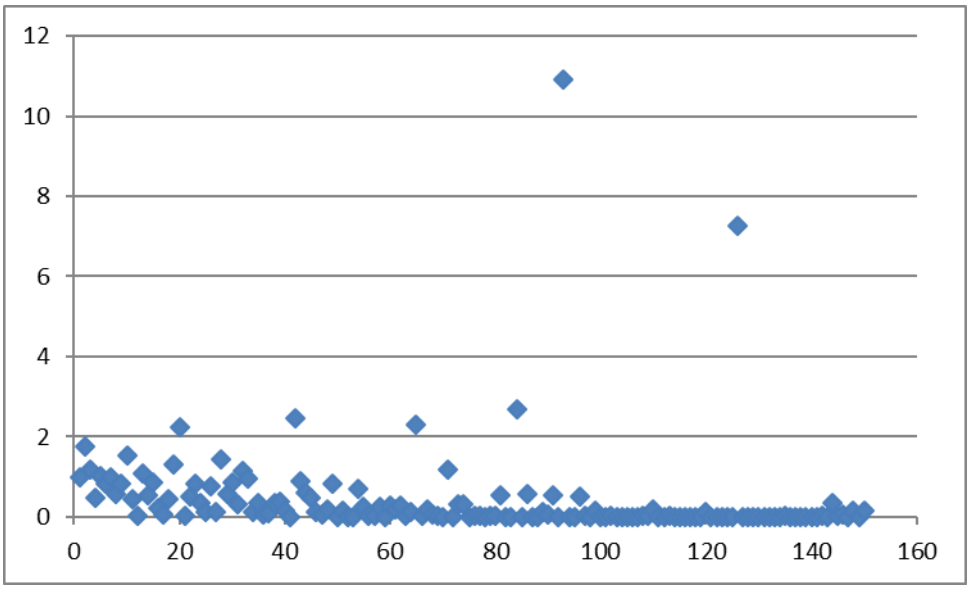

Figure 2: graph showing death Oyepata factor caused by Covid-19 for each country relative to the USA from 18th to 24th of August, 2022. The X-axis representsthe Comparison (Oyepata) factor, Y-axis represent countries.

Discussion

A lot have been known about COVID-19. A lot is still needed to be known. The advent of new strain, particularly Omicron has dampened hope that the virus is fully contained and understood. Also, the recent surge in Asian and European regions has encouraged fear on the possibilities of future viral mutant strain with a more complicated implication. Already there has been increased dose duration and rate because of currently identified strain. The symptoms of COVID-19 are variable depending on the type of variant contracted, ranging from mild symptoms to critical and possibly fatal illness39,40. Common symptoms include coughing, fever, loss of smell (anosmia) and taste (ageusia), with less common ones including headaches, nasal congestion and runny nose, muscle pain, sore throat, diarrhea, eye irritation, and toes swelling or turning purple,41 and in moderate to severe cases breathing difficulties.42 People with the COVID-19 infection may have different symptoms, and their symptoms may change over time.

Three common clusters of symptoms have been identified: one respiratory symptom cluster with cough, sputum, shortness of breath, and fever; a musculoskeletal symptom cluster with muscle and joint pain, headache, and fatigue; a cluster of digestive symptoms with abdominal pain, vomiting, and diarrhea[43,44].

Asian region has taken the lead in daily and weekly reported reported cases of the virus, though, mortality cases seems to be steadily downward. Africa has been an encouraging home to several infectious diseases such as dengue fever, smallpox, measles chickenpox, Ebola, and polio disease[46-49]. In many cases, vaccination has been developed against some of these infections or the body's immune system has successfully found a way to defend against these pathogens[50-53]. This may have had a beneficial effect against exposure to the same or related organism. There is the likelihood of the virus spreading fast across African populations within a minimal period causing a large proportion to have been exposed to the virus without manifesting obvious symptoms and may have even recovered. This may provide explanation to the reason Africa appeared not to be relatively affected by the pandemic that has gripped the world for a long time.

There has been a severe upsurge of the virus in Asian continent. There has also been several arguments as explanation for these, such as poor cases report from the onset, mutation, inadequate policy and approach in the initial management of the virus and slow vaccine availability[54-57]. American continent appears to have more infectivity and less reports of mortality from the new variant of Covid-19. Seasonal changes might have been responsible for the undulating phases in cases and mortality report about the virus. Africa has been least plagued by all variants at all phases. Also, most European countries have a lesser mortality ratio when compared to American continents. These observations are interesting, compared to previous works on the cumulative effect of the virus[58,59]. European Countries like UK, Spain and Greece has higher death comparism factor than case comparism while the rest have higher case comparism factor. Reason for this is not fully understood. Selective, environmental and genetic variation may be a contributing factor.

Africans appear to be unaffected from this seemly uncontrollable and lethal unleash. Apart from fewer cases of the infection, Africans have shown the potential to have much lesser mortality even when compared to the case of the infection[60-63]. This suggests that the African body system has over time developed a more progressive, robust and faster immune response that reduces chances of the virus causing disease-related health complications. Compared to previous cumulative observation, though the mortality rate remained higher than other western countries, the USA has made a remarkable stride in preventing and reducing the cases of infection compared to several other countries that suffered the same fate from the virus. From available data, Africa which generally is classified as the third world or underdeveloped do not have severe medical consequences of the infection, and when infected they tend to recover faster with a lower chance of complications and mortality.

Studies have shown, that because of poor health and environment, the immune systems of African children tend to develop faster and more robust compared to Dutch children[64,65]. Childhood Exposure to the pathogenic organism may have boosted the immune system and protected children from developing certain allergies and other infectious diseases, on later exposure to a similar allergen or pathogen[66]. This view is also supported by data and comparison factors obtained from Haiti. Haiti is currently the poorest country in the Latin America and Caribbean region and among the least developed countries in the world[67,68]. They have one the least case of infection and mortality resulting in little to no significant value of comparison factor. Thus, childhood or early exposure to some diseases in poor countries may have encouraged a more robust immune response to the same or related infection. Therefore, several African countries are both vulnerable and potentially more defensive against the coronavirus.

Conclusion

The upsurge of the virus in Asia region poses a new challenge and fear of the possibilities of a mutation with new consequences, while more attentions needs to be done to understand why Africa has always been safe. Vaccines developed from Africans serum or antibody will most likely provide best protection against present or future strains of the virus.

Conflict of Interest

The authors declare that there are not any potential conflicts of interest

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