

Original Article

# Repurposed Antiviral Drugs for Covid-19 — Interim WHO Solidarity Trial Results

WHO Solidarity Trial Consortium

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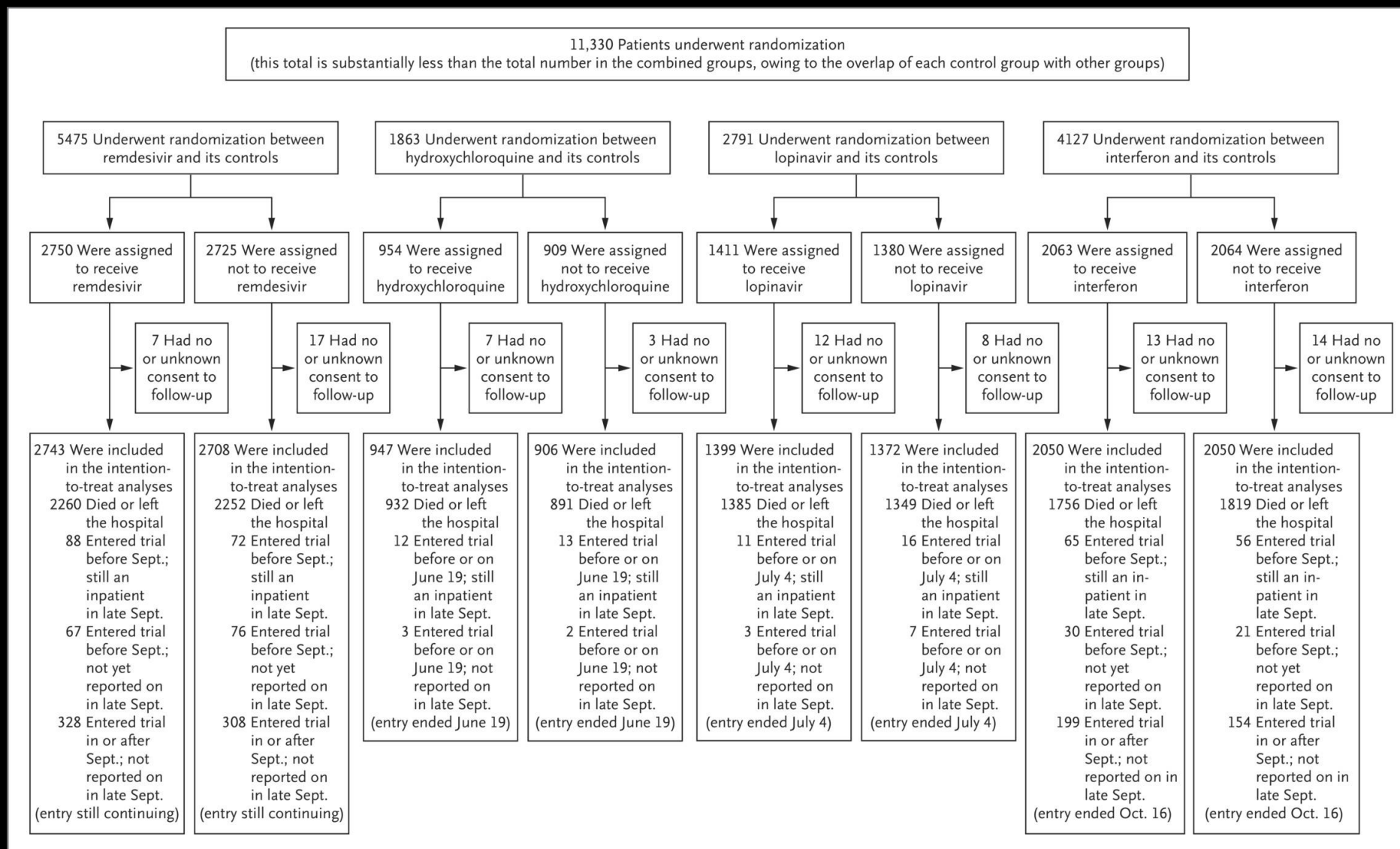
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# Study Overview

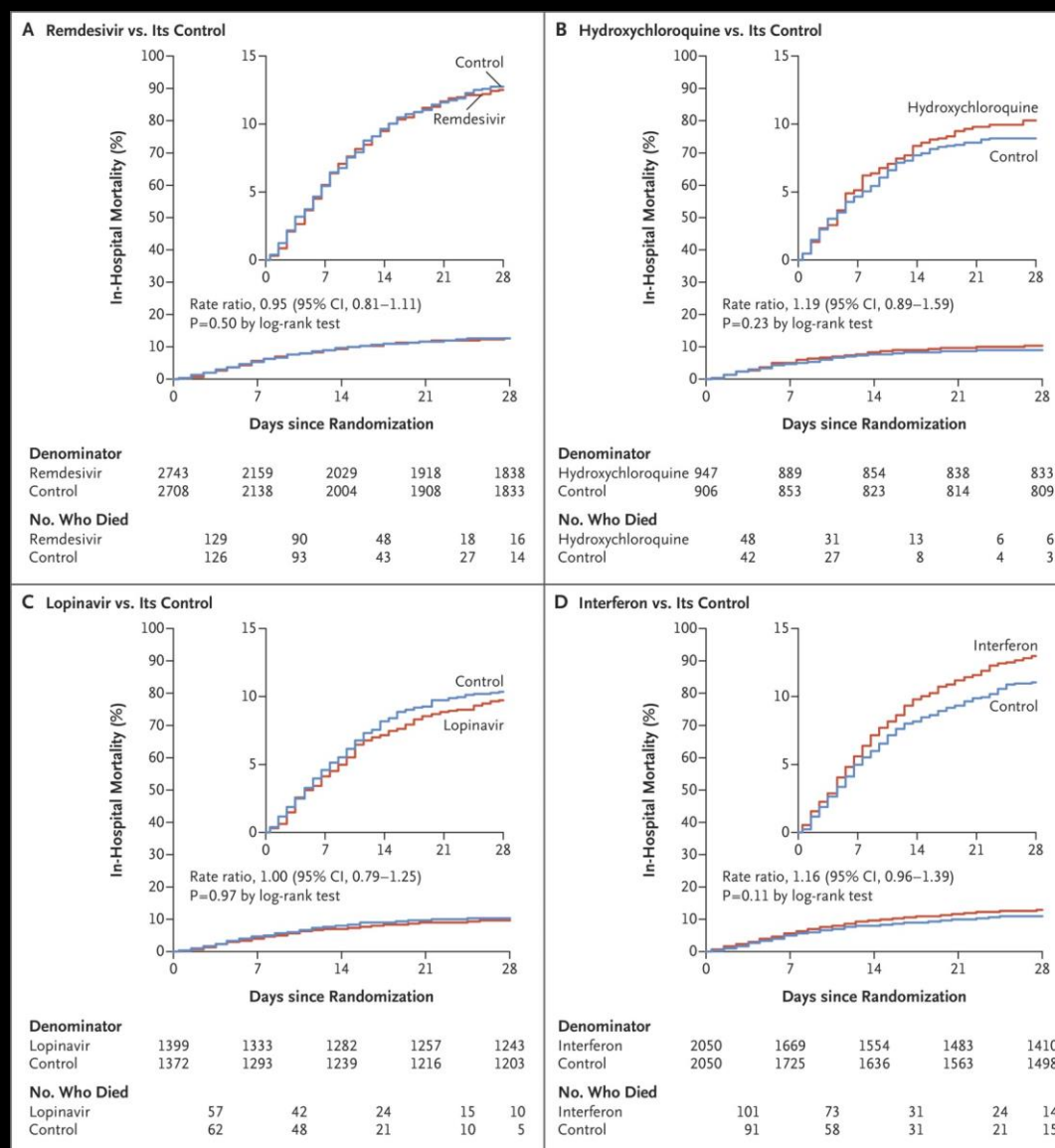
- The authors report interim results of the WHO Solidarity trial of four repurposed antiviral drugs — remdesivir, hydroxychloroquine, lopinavir, and interferon beta-1a — in patients hospitalized with Covid-19.
- Effects on overall mortality, initiation of ventilation, and duration of hospital stay are compared.



# Information to October 4, 2020, on Trial Entry, Follow-up, and Intention-to-Treat Analyses.



# Effects of Remdesivir, Hydroxychloroquine, Lopinavir, and Interferon on In-Hospital Mortality.

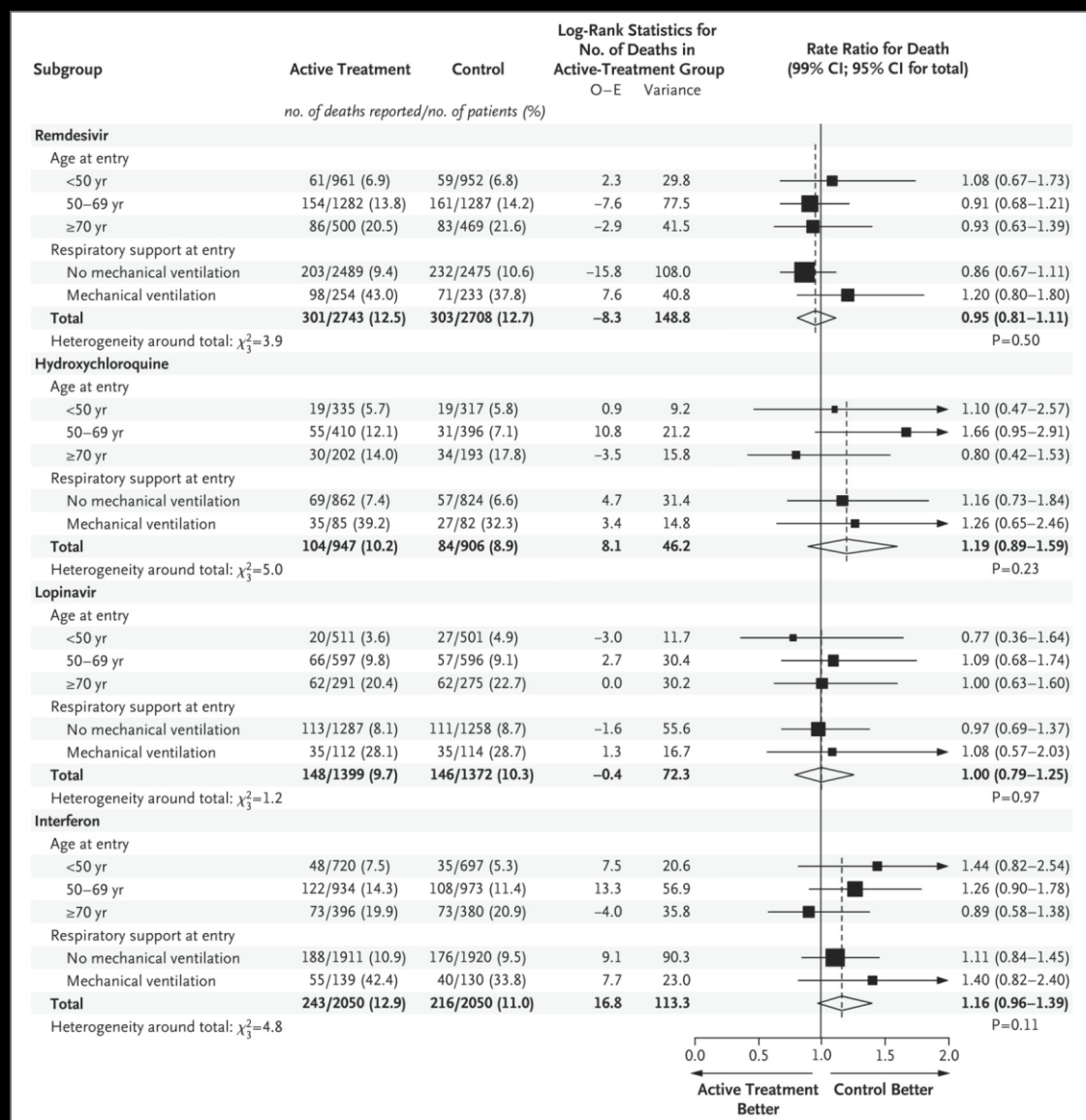


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# Rate Ratios for In-Hospital Death, Subdivided by Age and Respiratory Support at Trial Entry.

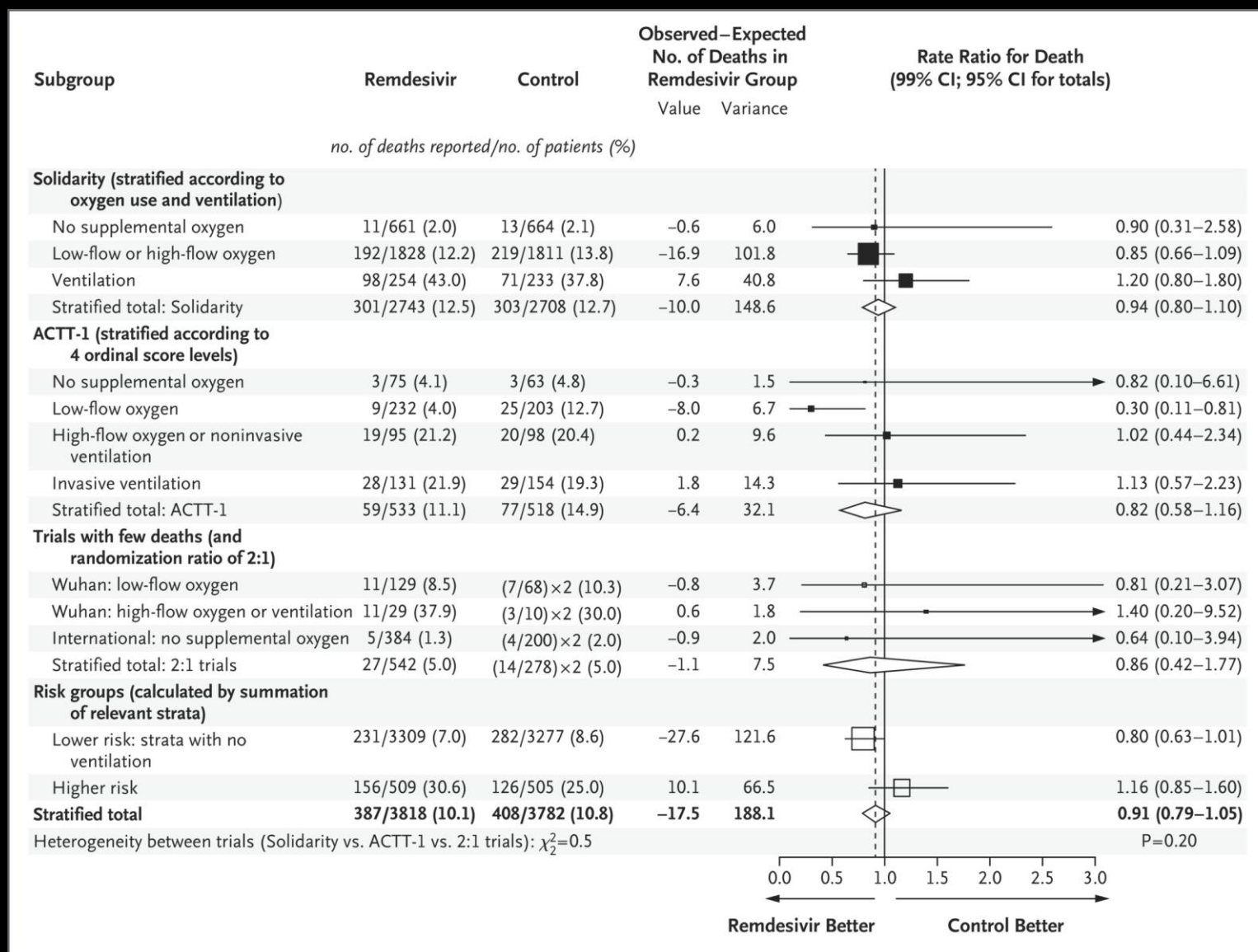


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# Meta-Analysis of Mortality in Trials of Random Assignment of Remdesivir or Its Control to Hospitalized Patients with Covid-19.



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# Entry Characteristics According to Random Assignment, and Adherence to That Assignment.

Variable	Any Intention-to-Treat Analysis (N=11,266)			Remdesivir vs. Its Control		Hydroxychloroquine vs. Its Control		Lopinavir vs. Its Control		Interferon vs. Its Control†	
	Entered Trial	Died in Hospital‡	28-Day Mortality§	Active (N=2743)	Control (N=2708)	Active (N=947)	Control (N=906)	Active (N=1399)	Control (N=1372)	Active (N=2050)	Control (N=2050)
	no. (%)	no.	%	no. of patients							
Entry characteristics											
Age											
<50 yr	3995 (35)	237	6.2	961	952	335	317	511	501	720	697
50–69 yr	5125 (45)	618	12.8	1282	1287	410	396	597	596	934	973
≥70 yr	2146 (19)	398	20.4	500	469	202	193	291	275	396	380
Respiratory support											
No supplemental oxygen at entry	3204 (28)	78	2.5	661	664	345	341	528	539	482	490
Supplemental oxygen at entry	7146 (63)	844	12.8	1828	1811	517	483	759	719	1429	1430
Already receiving ventilation	916 (8)	331	39.0	254	233	85	82	112	114	139	130
Lesions in both lungs											
No	1266 (11)	49	3.7	287	259	154	170	235	256	162	155
Yes	8832 (78)	1043	12.7	2175	2153	656	618	985	945	1723	1718
Not imaged at entry	1168 (10)	161	14.9	281	296	137	118	179	171	165	177
Previous days in the hospital											
0	3289 (29)	319	9.8	724	712	296	281	423	403	678	677
1	3713 (33)	384	10.8	917	938	317	312	442	445	681	662
≥2	4264 (38)	550	14.6	1102	1058	334	313	534	524	691	711
Geographic region											
Europe and Canada¶	2488 (22)	188	7.8	715	698	286	267	349	350	254	244
Latin America	1941 (17)	400	22.7	470	514	97	96	145	148	474	478
Asia and Africa**	6837 (61)	665	10.3	1558	1496	564	543	905	874	1322	1328
Other characteristics											
Male sex	6985 (62)	852	13.0	1706	1725	574	535	851	802	1303	1278
Current smoker	830 (7)	93	11.8	178	161	92	82	141	124	136	138
Coexisting conditions											
Diabetes	2768 (25)	379	14.7	707	666	199	205	341	324	489	537
Heart disease	2337 (21)	319	14.7	571	567	193	194	289	290	427	456
Chronic lung disease	635 (6)	102	17.2	151	145	62	66	95	87	114	109
Asthma	529 (5)	56	11.5	139	139	41	46	65	56	75	97
Chronic liver disease	135 (1)	21	17.2	36	41	15	14	15	23	11	22
Adherence to assigned treatment											
Percent taking trial drug midway through scheduled duration††‡‡				96	2	95	6	94	2	94	2
Percent ever reported as discharged who were still in the hospital at various times††											
On day 7				69	59	64	54	68	59	55	51
On day 14				22	19	23	20	31	22	19	18
On day 21				9	8	11	10	12	11	8	7



# Conclusions

- These remdesivir, hydroxychloroquine, lopinavir, and interferon regimens had little or no effect on hospitalized patients with Covid-19, as indicated by overall mortality, initiation of ventilation, and duration of hospital stay.

