

Public opinion and information may correlate with harmful adverse events: an OpenVigil pharmacovigilance study

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INTRO

- Prominent media coverage and guidelines influence prescriptions, purchases and maybe subsequent (adverse) events (AE)^{1,2}

METHODS

- Retrospective, observational pharmacovigilance study using OpenVigil 2
- Drugs used against coronavirus infections (MedDRA SMQ “COVID-19”), total counts (data 2004Q1 to 2021Q3), or as weekly aggregated from 2019 week 49 to 2021 week 39
- Dates of drug approvals/withdrawals, news headlines, scientific papers, preprints

RESULTS

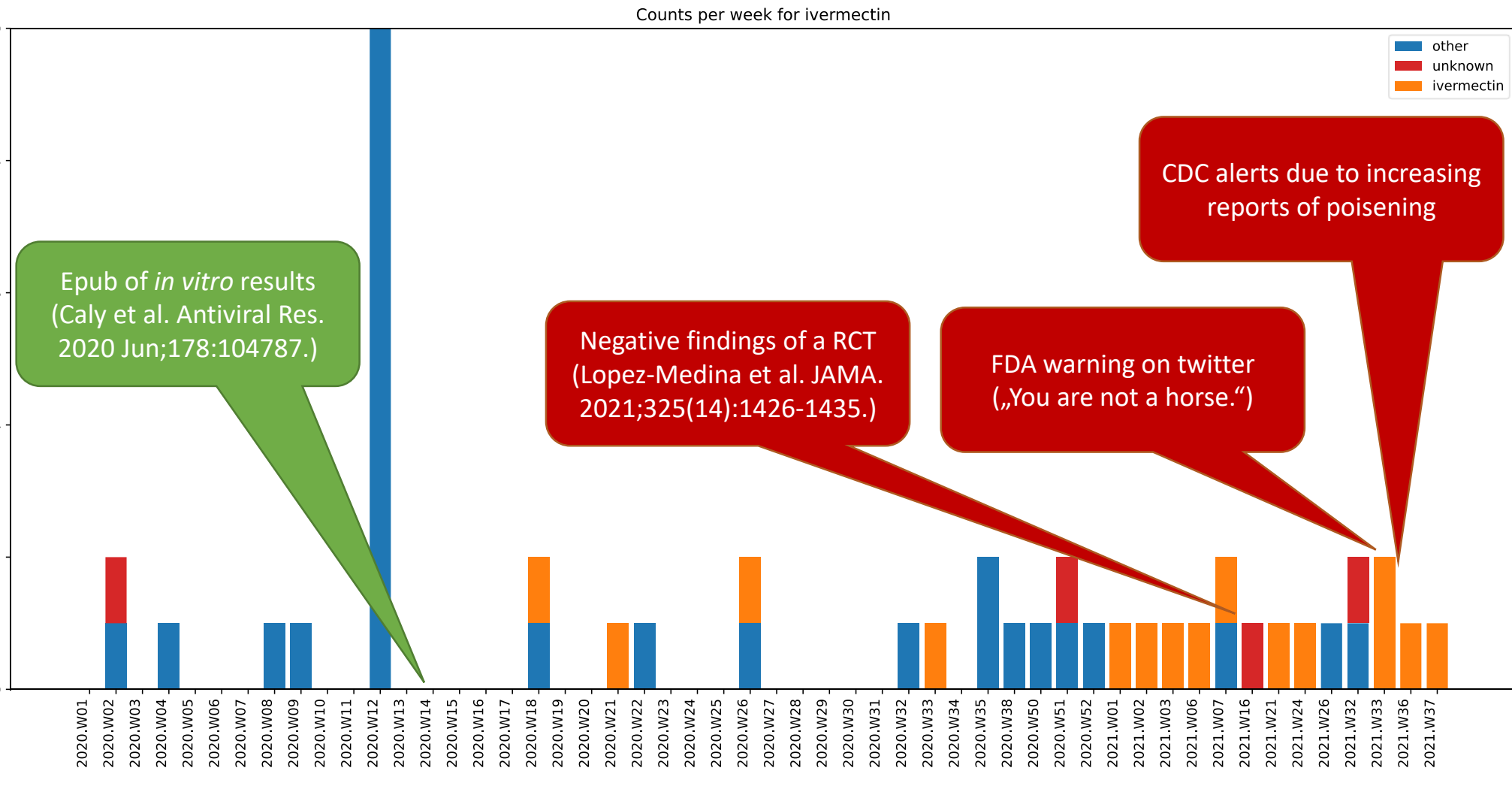
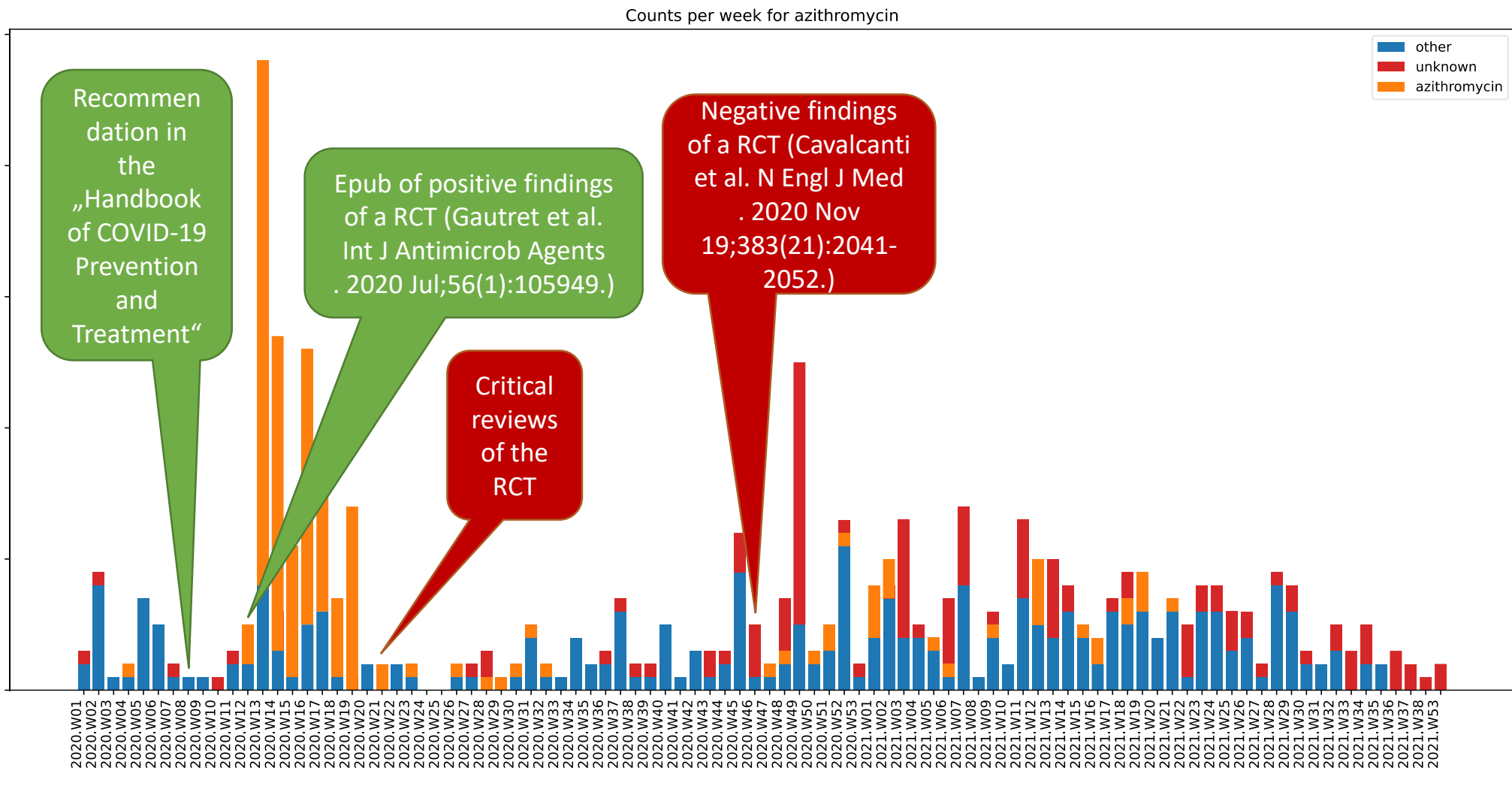
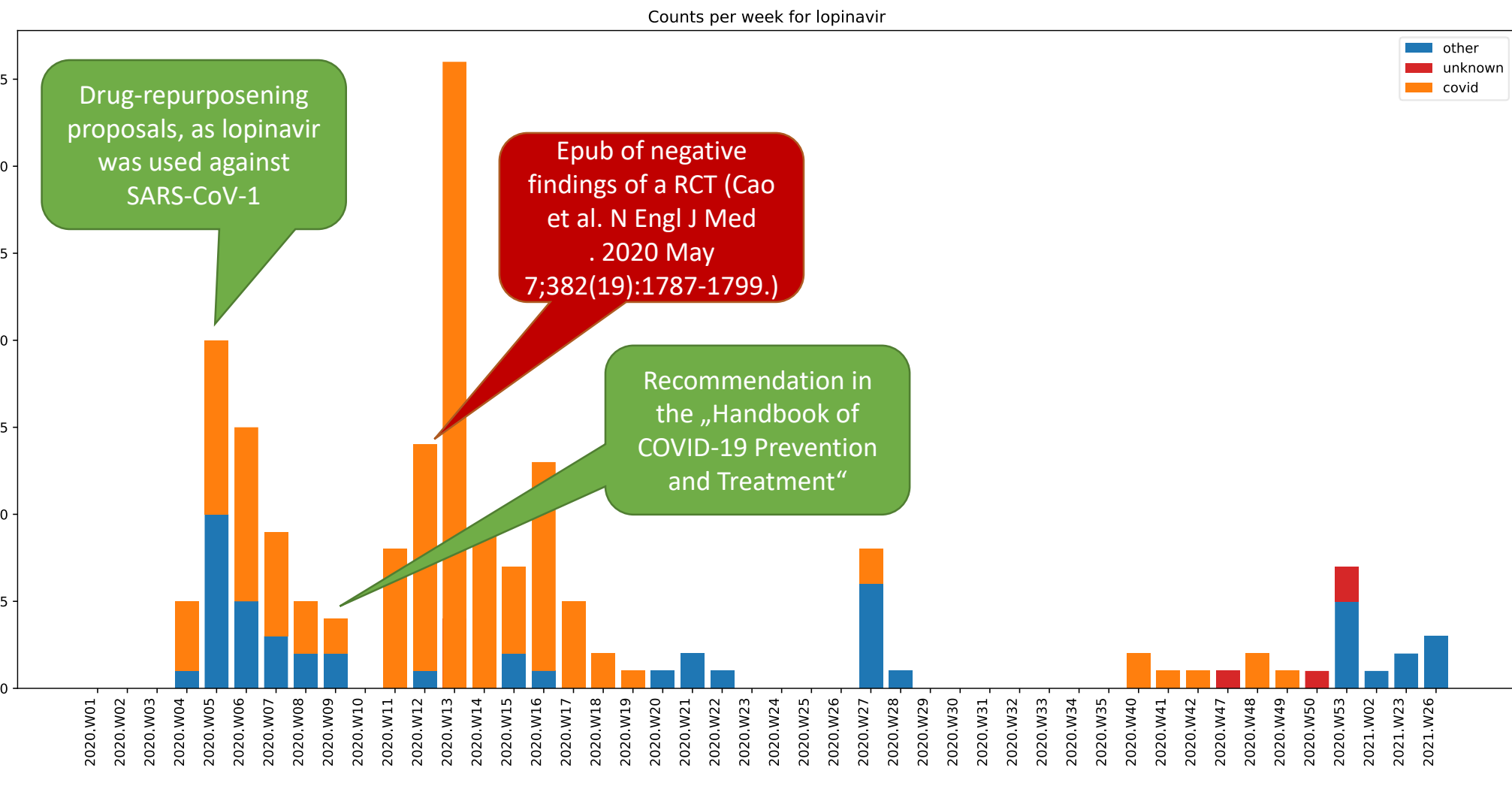
- n = 14,625 drug-AE pairs of drugs used against COVID-19
- Most reports for hydroxychloroquine (HCQ, n=2071, 14.2%), remdesivir (12.2%), bamlanivimab (8.1%), tocilizumab (7.9%), azithromycin (7.4%).
- Drug-related adverse events more common when used for this indication
- Mortality higher when used for this indication (Tab. 1)

CONCLUSION

- There was a striking correlation of media coverage on putative anti-COVID drugs and subsequent change in AE reporting

Public (mis)information may lead to deadly adverse events.

calendar week of reported event
Public info (e.g. news, guideline)
Number of AE reports for hydroxychloroquine in FAERS



Drug	Indication COVID-19			Other or unknown indication			p
	outcome dead	all outcomes	%	outcome dead	all outcomes	%	
azithromycin	157	1507	10.4	838	13037	6.4	<0.001
HCQ	302	2838	10.6	1484	40356	3.7	<0.001
ivermectin	18	82	22	137	1705	8	<0.001

Literature:
1. Kriegaum, M., Lissberg, K. B. & Wallach-Kildemoes, H. Pattern of statin use changes following media coverage of its side effects. Patient Prefer. Adherence 11, 1151 (2017).
2. Lu, C. Y. et al. Changes in antidepressant use by young people and suicidal behavior after FDA warnings and media coverage: quasi-experimental study. BMJ 348, (2014).
3. Niburski, K. & Niburski, O. Impact of Trump's Promotion of Unproven COVID-19 Treatments and Subsequent Internet Trends: Observational Study. J. Med. Internet Res. 22, (2020).
4. Mehra, M. R., Desai, S. S., Ruschitzka, F. & Patel, A. N. RETRACTED:Hydroxychloroquine or chloroquine with or without a macrolide for treatment of COVID-19: a multinational registry analysis. Lancet 0, (2020).