

Hydroxychloroquine Pre-Exposure Prophylaxis for COVID-19 in Healthcare Workers from India: A Meta-Analysis.

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DISCLOSURE STATEMENT

Speaker: Raphael Stricker, MD

Dr. Stricker has no financial arrangements or affiliations with any commercial entities whose products, research or services may be discussed in these materials.



Background

- COVID-19 Pandemic
 - 200 million registered cases of SARS-CoV-2
 - >4 million deaths world-wide
- COVID-19 Vaccines
 - Long-term safety and efficacy is unknown
 - Effects in pregnancy and certain pre-existing health conditions is unknown
 - Limited availability in resource-poor countries
- Vaccine Alternatives?



Background

- British study of 120,075 healthcare workers (HCWs)
 - 7-8-fold greater risk of developing severe COVID-19 compared to non-HCWs
- Hydroxychloroquine (HCQ)
 - A potential agent for pre-exposure prophylaxis (PrEP) for SARS-CoV-2 infection
 - Long terminal half-life (40 days)
 - Safe to use in children and pregnancy
- Meta-analysis of cohort studies from India to evaluate efficacy of weekly HCQ PrEP for COVID-19 prevention



Materials and Methods

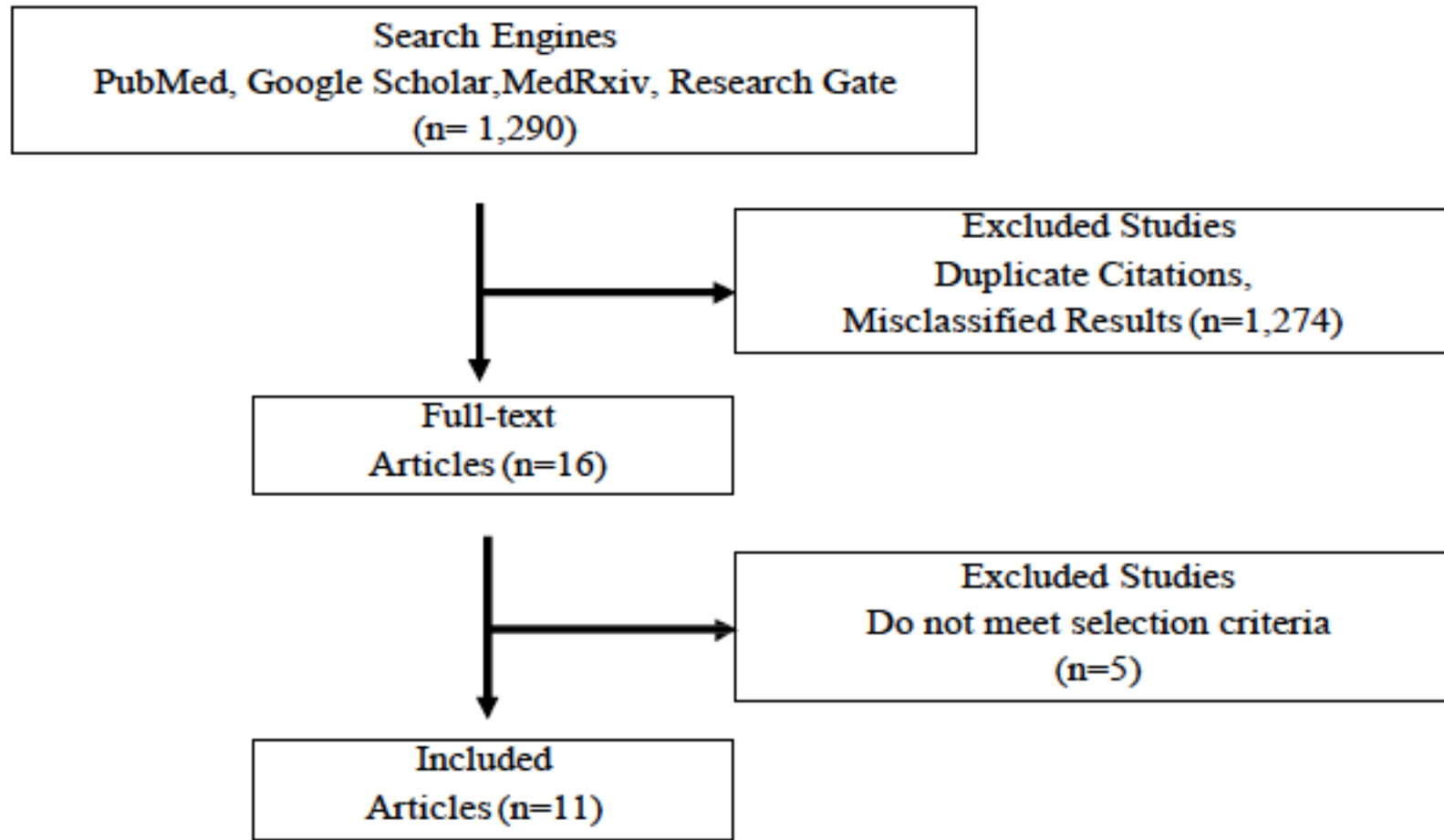
Table 1: Inclusion and Exclusion Criteria

Inclusion Criteria	Exclusion Criteria
Adults >18yo	Children <18yo
Healthcare workers	Non-healthcare workers
Hydroxychloroquine used in study	Hydroxychloroquine not used in study
India	Non-Indian Countries
Pre-COVID-19 vaccine, 2020	Post-COVID-19 vaccine, 2021
Pre-exposure prophylaxis	Post-exposure prophylaxis
No rheumatological disease	Rheumatological disease



Materials and Methods

Figure 1: Flow Diagram of Study Screening and Selection



Materials & Methods

HCQ Pre-exposure Prophylaxis Protocol*

HCQ 400mg BID on Day 1, then 400mg weekly

*Indian Council of Medical Research National Taskforce for COVID-19. Advisory on the use of Hydroxychloroquine as prophylaxis for SARS CoV2 infection. March 22, 2020.



Results

Table 2: Demographics of Healthcare Worker Studies

Subjects at risk	Value (%)
Total	7,676
Sex*	
Male	4,140 (58)
Female	2,943 (42)
Age**	
Mean Age \pm SD (years)	33.1 \pm 7.7
Occupation**	
Direct patient care (Doctors, nurses)	2,939 (63)
Support staff (Lab, housekeeping, etc.)	1,699 (37)

*Available for 9/11 studies. **Available for 8/11 studies



Results

Table 3: HCQ PrEP Studies in Healthcare Workers from India: Random Effects Model

Subjects at risk	HCQ	No HCQ	RR	95% CI	P value
Any HCQ doses	3,489	4,127			
Infection	871 (25%)	1,428 (35%)	0.56	0.37- 0.83	0.0040
HCQ \geq 6 doses	1,273	3,056			
Infection	272 (21%)	986 (32%)	0.25	0.13- 0.50	<0.0001

HCQ, hydroxychloroquine; PrEP, pre-exposure prophylaxis; RR, risk ratio; CI, confidence interval



Figure 2: Forest Plot of HCQ PrEP Studies: HCQ PrEP Any Duration

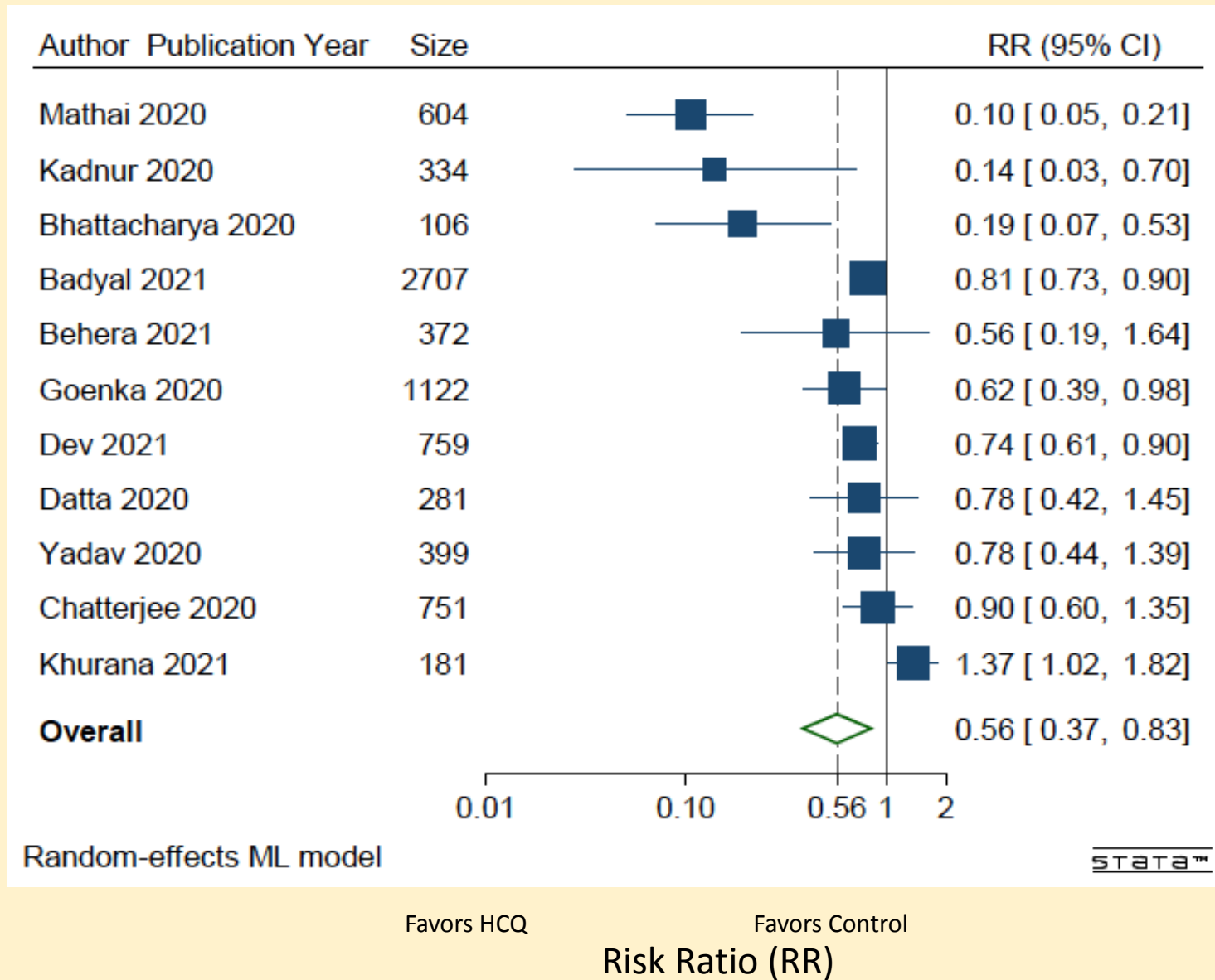
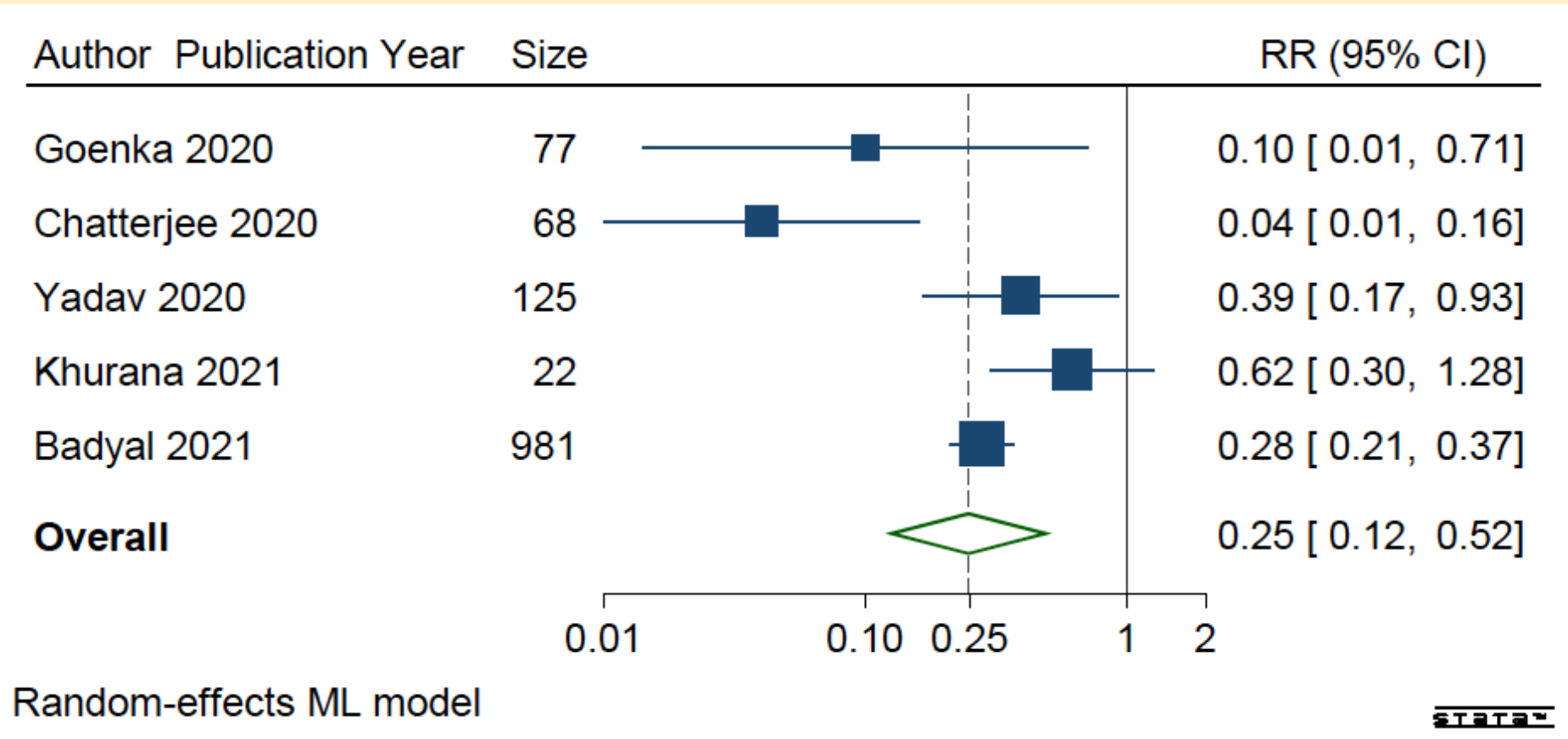


Figure 3: Forest Plot of HCQ PrEP Studies: HCQ PrEP \geq 6 Weeks



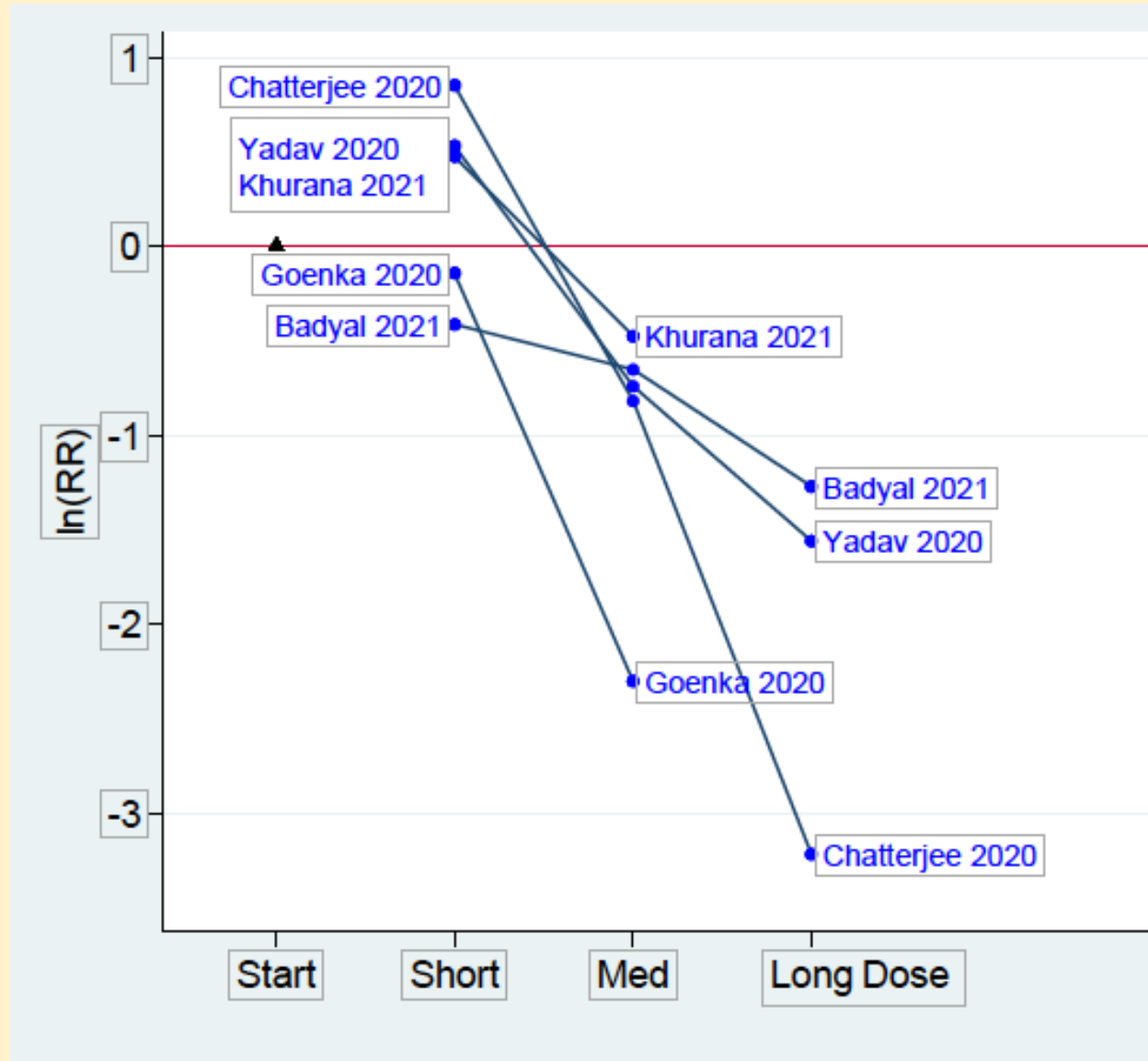
Favors HCQ

Favors Control

Risk Ratio (RR)



Figure 4: Effect of HCQ PrEP on Risk Ratio Over Time



Results

Table 4: Adverse Events Reported by HCWs Taking HCQ PrEP

	Chatterjee et al.	Bhattacharya et al.	Kadnur et al.*	Total (%)
Number on HCQ	365	54	248	667
Nausea	23	0	21	44 (7%)
Headache	20	2	30	52 (8%)
Vertigo	0	0	21	21 (3%)
Irritability	0	0	9	9 (1%)
Diarrhea	17	0	9	26 (4%)
Palpitations	1	0	5	6 (1%)
Dyspepsia	14	16	10	40 (6%)
Rash/Allergy	4	3	8	15 (2%)
Arrhythmia	0	0	0	0 (0%)

*11/248 (4.4%) discontinued HCQ PrEP due to AEs



Conclusions

1. Weekly hydroxychloroquine pre-exposure prophylaxis (HCQ PrEP) appeared to be safe and effective for prevention of COVID-19 in high-risk healthcare workers from India.
2. Further studies of HCQ PrEP are warranted to supplement vaccines in the prevention of COVID-19.



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