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Inactivated trivalent influenza vaccination is associated with lower mortality among patients with COVID-19 in Brazil

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O PROJETO:

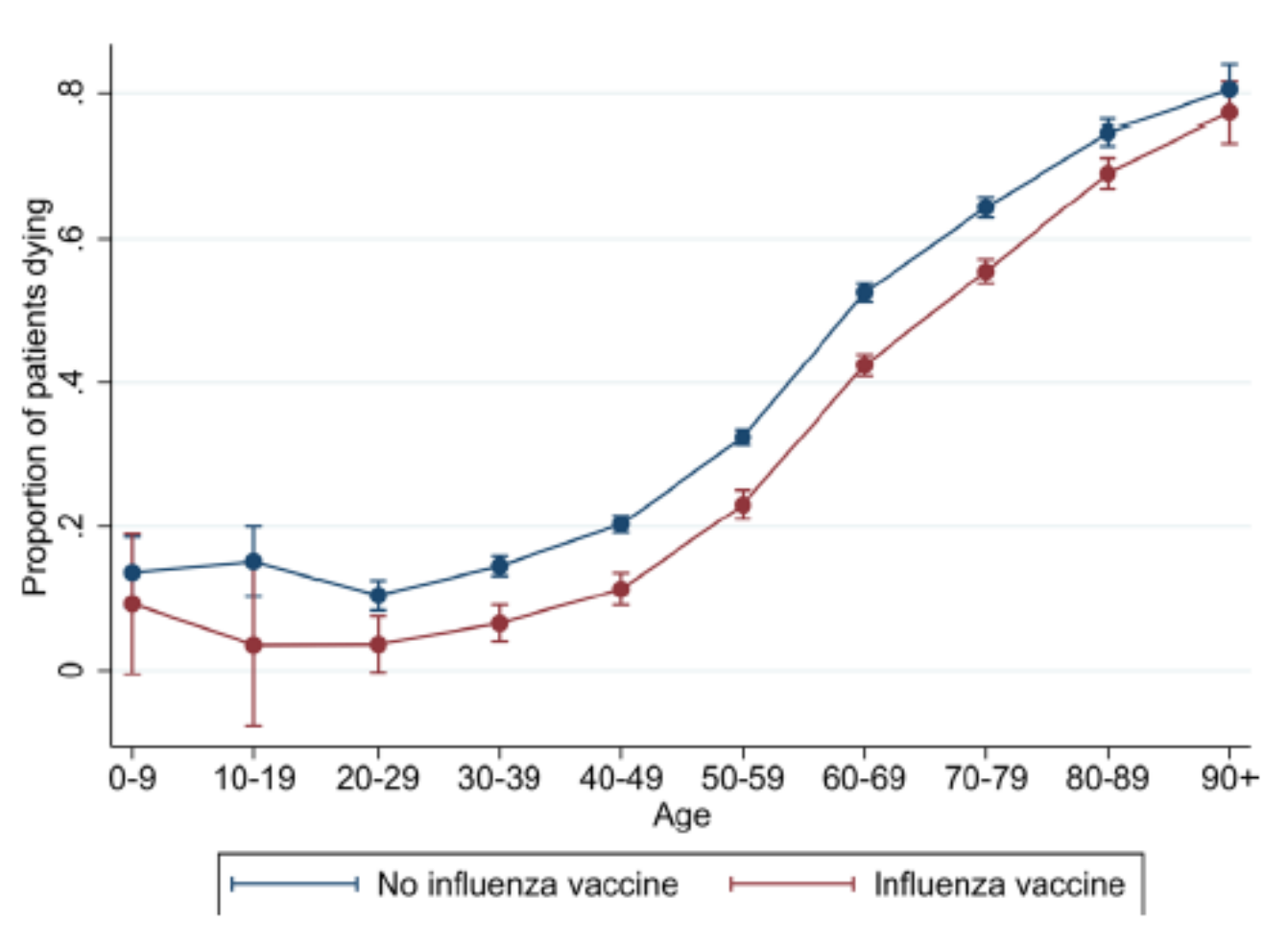
O que: Estimar associações entre vacinação trivalente contra influenza e mortalidade por COVID-19, bem como desfechos clínicos graves entre os pacientes hospitalizados.

Quem: todos os pacientes hospitalizados com COVID-19 com informações sobre vacinação disponíveis no sistema eletrônico nacional de dados de infecção respiratória

Como: a medida de resultado foi a taxa de mortalidade de paciente hospitalizados com COVID-19 com e sem vacinação trivalente inativada contra influenza recente.

Estudo observacional retrospectivo a partir dos dados obtidos do sistema DATASUS entre janeiro de 2020 e junho de 2020

RESULTADOS


Proportion of patients dying
0
.2
.4
.6
.8
0-9
10-19
20-29
30-39
40-49
50-59
60-69
70-79
80-89
90+
Age
No influenza vaccine
Influenza vaccine

Resultados

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Table 3 Estimated associations between vaccination status and COVID-19 severity

	Intensive care		Respiratory support	
Outcome	(1)	(2)	(3)	(4)
Influenza vaccine	0.919***	0.927**	0.818***	0.825***
	(0.864 to 0.977)	(0.871 to 0.986)	(0.759 to 0.880)	(0.767 to 0.887)
Sample size	39 156	39 156	39 745	39 745

Table 3 compares the need for intensive care (columns 1 and 2) as well as invasive respiratory support (columns 3 and 4) among patients with and without influenza vaccination. Columns 1 and 3 control for age and treatment facility only. Columns 2 and 4 also control for SES and comorbidities. All estimates are based on multivariable logistic regression models. Estimated coefficients are expressed as ORs with 95% CIs in parentheses. SEs are adjusted for clustering at the facility level using the Huber-White cluster-robust variance estimator. Age controls correspond to separate binary indicator variables for each 10-year age group. SES controls include gender, race and educational attainment group. Missing data on comorbidities and SES were imputed using multiple imputations using chained equations.

*p<0.10, **p<0.05, ***p<0.01.

SES, socioeconomic status.

Reflexão

Uma possível explicação para o achado da vacinação contra influenza estar associado a melhores resultados na evolução da COVID-19 seria a mais rápida depuração do SARS-CoV- 2 pela resposta do sistema imune inato induzida por tal vacinação, evitando a progressiva disseminação do vírus para áreas inferiores dos tecidos pulmonares

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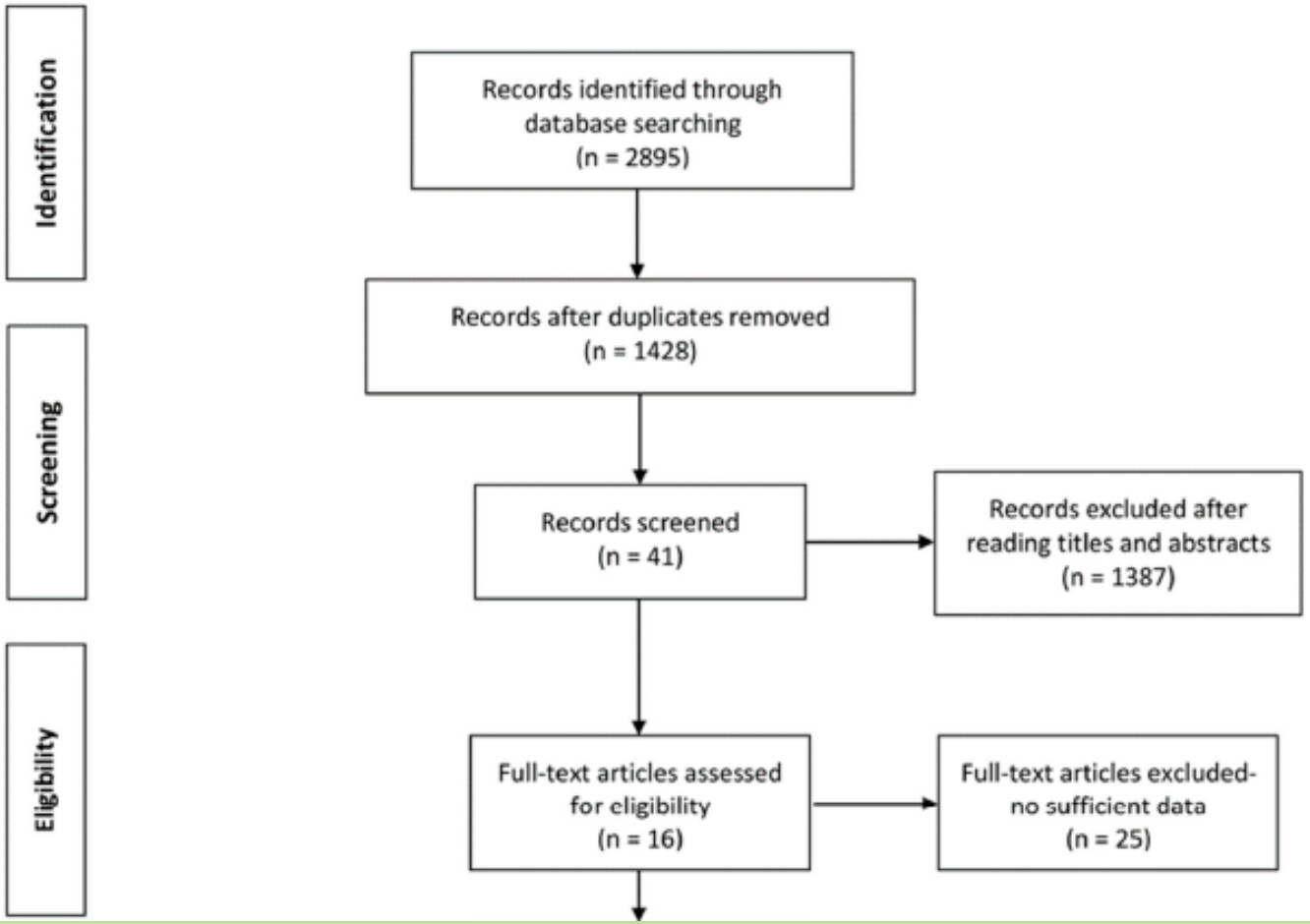

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Review

The Association between Influenza Vaccination and COVID-19 and Its Outcomes: A Systematic Review and Meta-Analysis of Observational Studies

Ruitong Wang [1], Min Liu [1] and Jue Liu [1,2,3,*]

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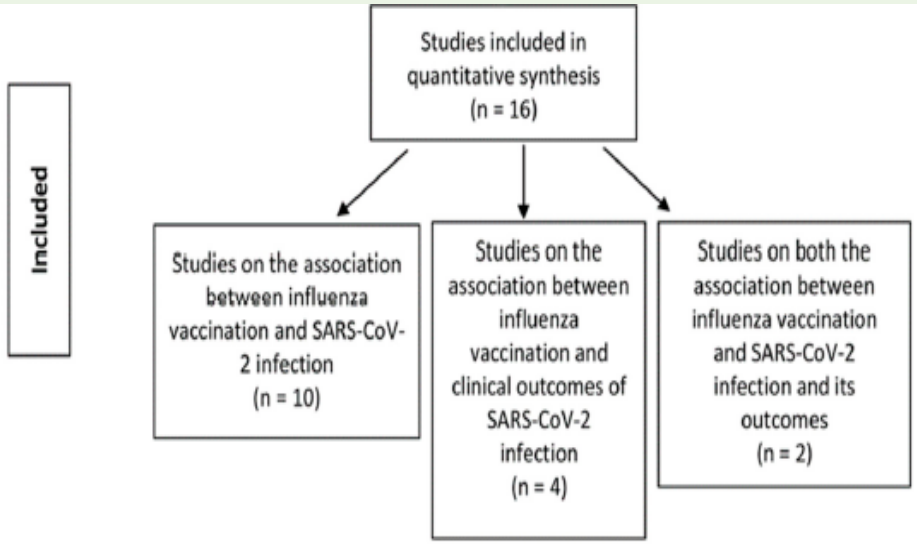

Figure 1. PRISMA flow diagram of the study selection procedure.

3.2. The Association between Influenza Vaccination and COVID-19 and Its Outcomes

The association between influenza vaccination and SARS-CoV-2 infection is presented in Figure 2, Table 3 and Supplementary Table S1. Influenza vaccination was shown to be associated with a lower risk of SARS-CoV-2 infection in both models (fixed effects model: pooled adjusted OR: 0.86, 95%CI: 0.81–0.91; random effects model: pooled adjusted OR: 0.86, 95%CI: 0.79–0.94).

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Table 3. Summary of the overall association between influenza vaccination and SARS-CoV-2 infection and clinical outcomes.

Outcomes	Number of Studies	I^2 Value (%)	*p* Value	Adjusted Estimates [a] (95%CI)	
				Fixed Effects Model	Random Effects Model
SARS-CoV-2 infection	9	41.1	0.09	0.86 (0.81–0.91)	0.86 (0.79–0.94)
Intensive care	2	68.2	0.08	0.93 (0.87–0.99)	0.63 (0.22–1.81)
Hospitalization	3	87.6	<0.01	0.84 (0.75–0.93)	0.74 (0.51–1.06)
Mortality	3	82.5	<0.01	0.86 (0.81–0.93)	0.89 (0.73–1.09)

[a]: Adjusted OR or adjusted RR.

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