Le infezioni pandemiche virali

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Outline

- Update on
  - COVID-19
  - RSV
  - Influenza

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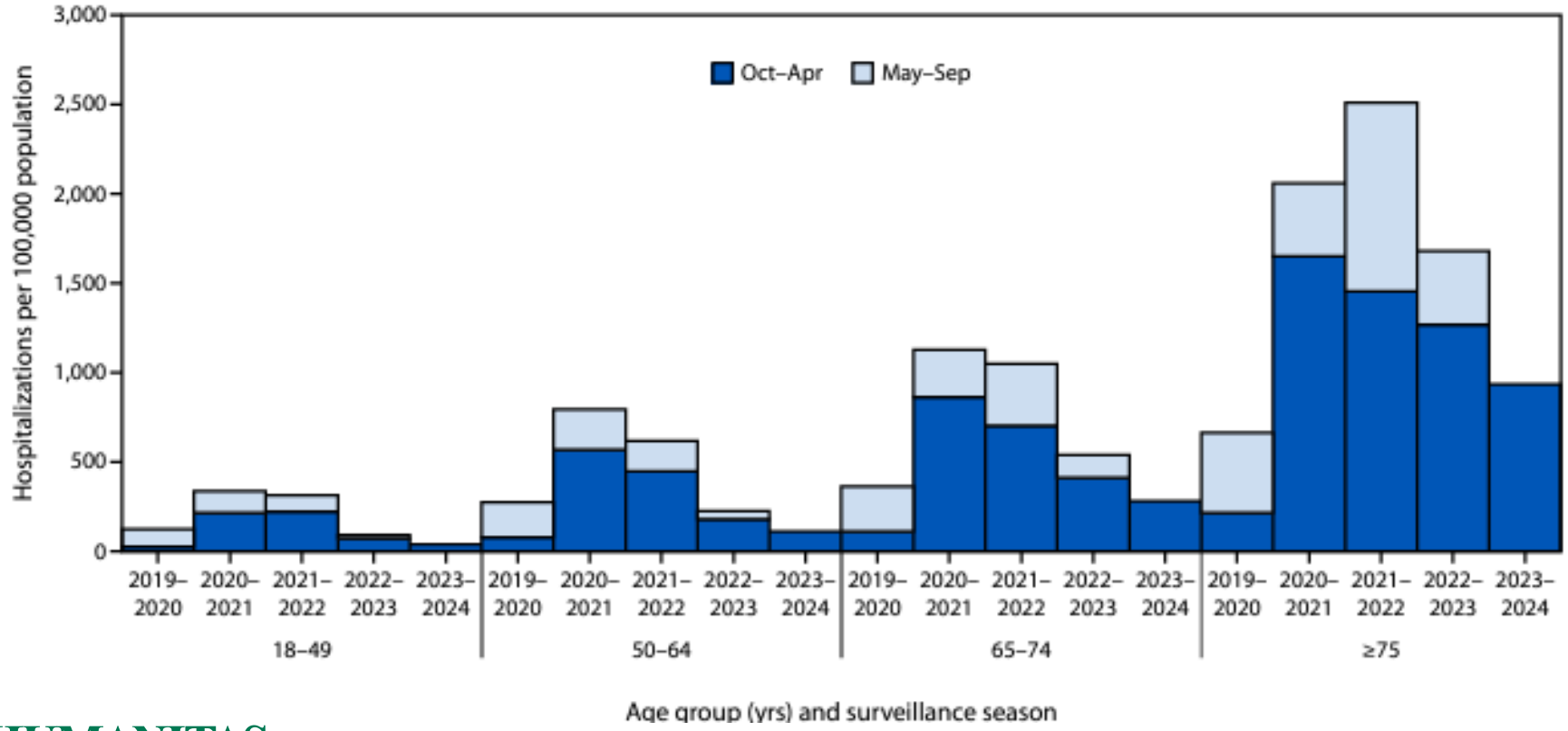
COVID-19–Associated Hospitalizations Among U.S. Adults Aged ≥18 Years — COVID-NET, 12 States, October 2023–April 2024

Morbidity and Mortality Weekly Report

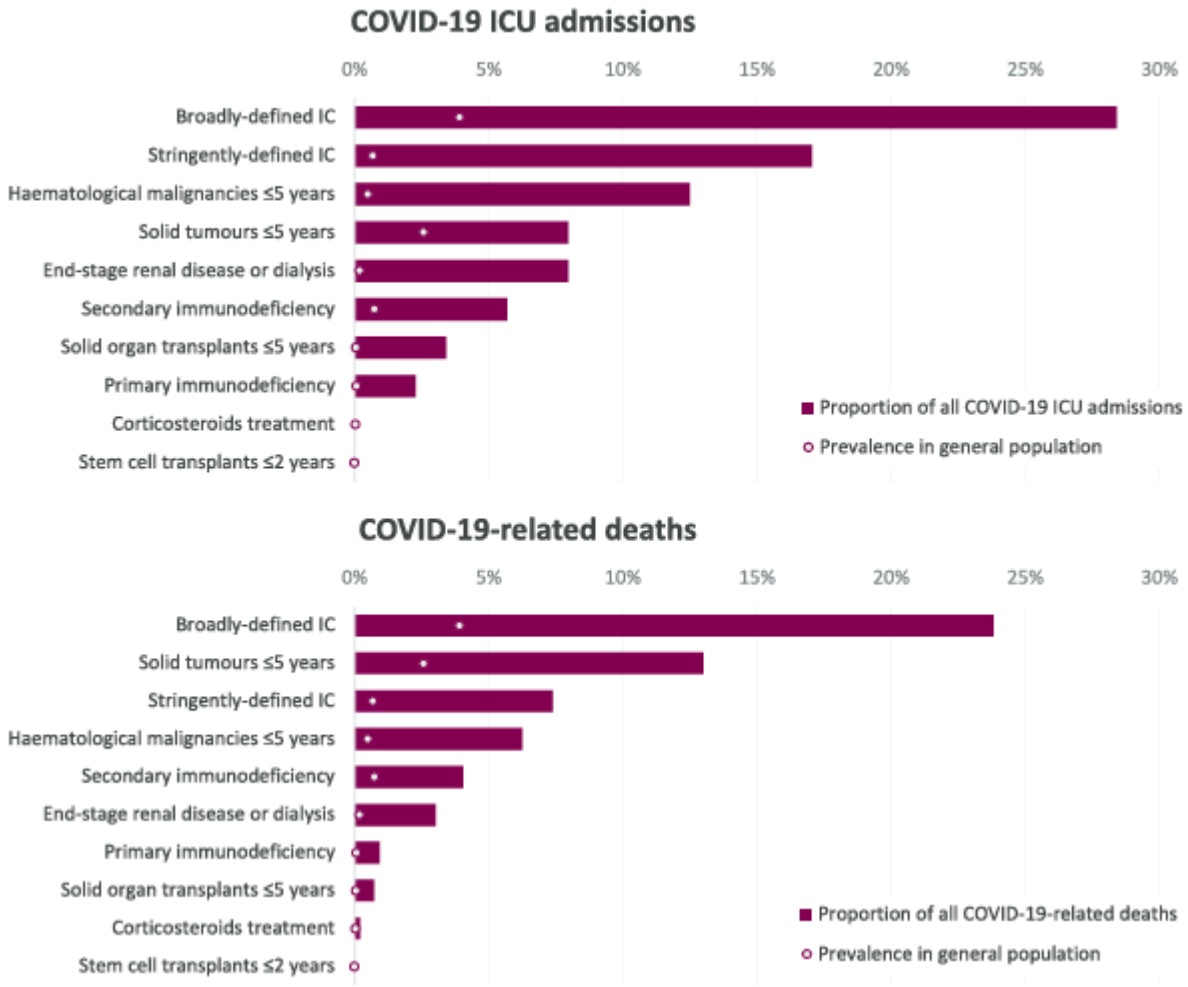
FIGURE 1. Cumulative* COVID-19–associated hospitalization† rates among adults aged ≥18 years, by age group and surveillance season§ — COVID-19–Associated Hospitalization Surveillance Network, 12 states,¶ March 2020–April 2024



Impact of COVID-19 on immunocompromised populations during the Omicron era: insights from the observational population-based INFORM study

Evans R et al. Lancet Reg Health Eur 2023 Oct 13:35:100747

- Broadly defined IC = 3.9% of the overall population
- Stringently-defined 0.7% the overall population vs 8.0% of COVID-19 hospitalisations,16.5%of ICUadmissions, and7.4% of deaths



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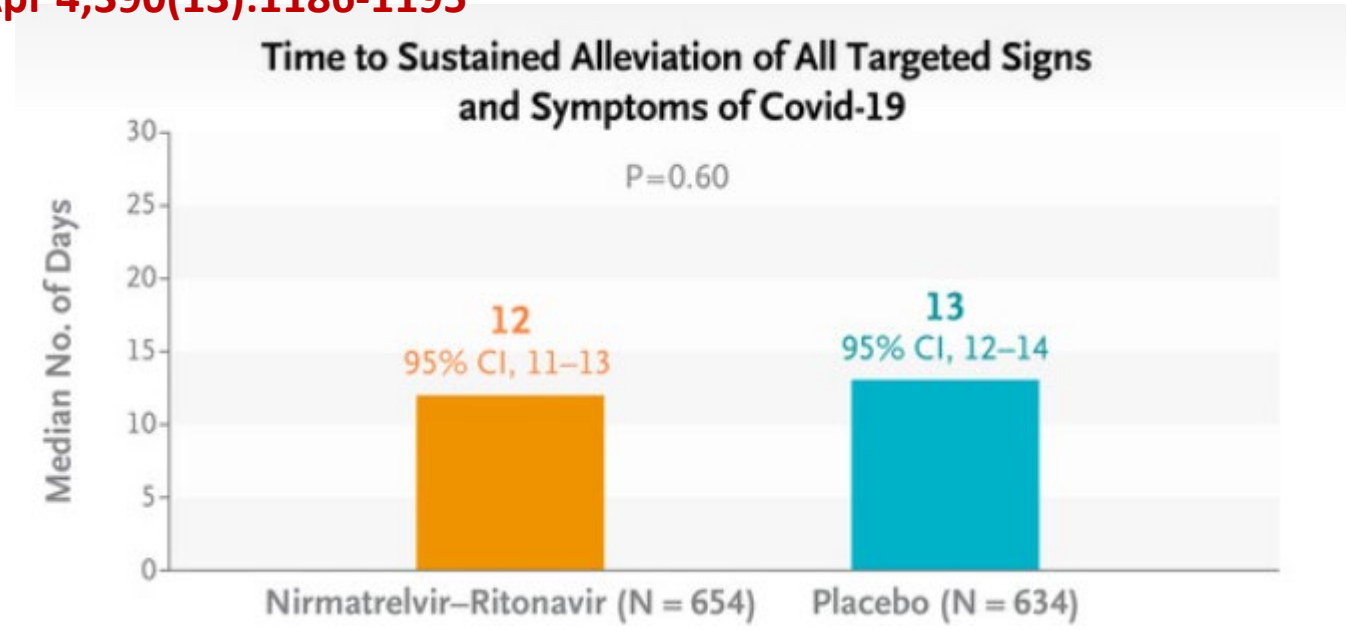
Nirmatrelvir for Vaccinated or Unvaccinated Adult Outpatients with Covid-19

Hammond J et al. N Engl J Med 2024 Apr 4;390(13):1186-1195

1296 patients randomized to receive nirmatrelvir-ritonavir or placebo every 12 hours for 5 days

The primary end point was the time to sustained alleviation of all targeted Covid-19 signs and symptoms. Covid-19–related hospitalization and death from any cause were also assessed through day 28.



Hospitalizations or deaths

- Nirmatrelvir-ritonavir 5/654 participants (0.8%)
- Placebo 10 /634 (1.6%)
- difference of −0.8 percentage points (95% confidence interval [CI], −2.0 to 0.4)

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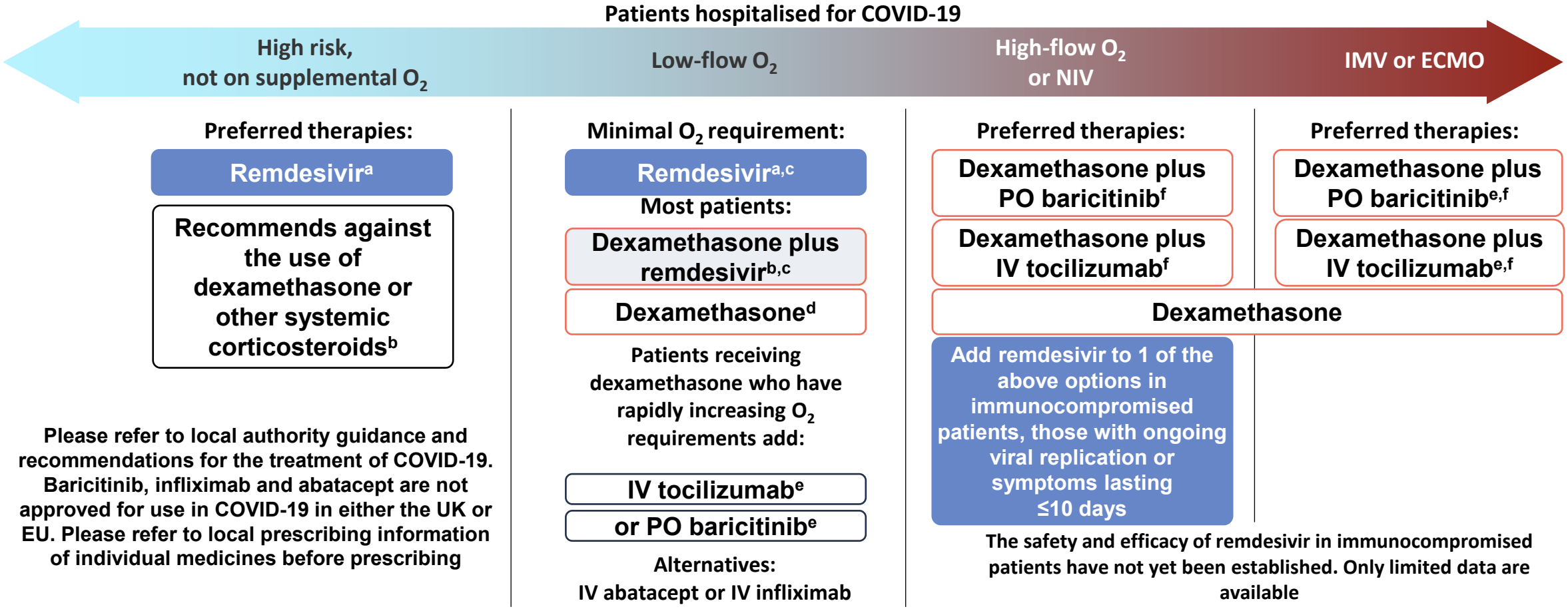
The US NIH COVID-19 treatment guidelines reflect a multifaceted approach for COVID-19 management



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PINC AI (mortality)

December 2021–April 2023

Remdesivir + dexamethasone was associated with a significant reduction in mortality risk vs dexamethasone in patients hospitalised with COVID-19

N=151,215

Adults hospitalised with COVID-19

- RDV + DEX (n=33,037)
- DEX (n=33,037)

Primary outcome

14-day and 28-day all-cause mortality[a]

Mortality relative risk reduction at Day 28 for RDV + DEX vs DEX alone

Overall[b]

24%

(n=66,074)

aHR: 0.76 (95% CI, 0.72–0.81)
p<0.0001

No supplemental oxygen

20%

(n=29,508)

aHR: 0.80 (95% CI, 0.74–0.88)
Unadjusted ARR: 0.5%
p<0.0001

Low-flow oxygen

26%

(n=24,412)

aHR: 0.74 (95% CI, 0.68–0.81)
Unadjusted ARR: 1.6%
p<0.0001

High-flow oxygen/NIV

29%

(n=10,656)

aHR: 0.71 (95% CI, 0.65–0.78)
Unadjusted ARR: 3.1%
p<0.0001

Remdesivir in combination with dexamethasone was associated with an overall decreased risk of mortality

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[a] Mozaffari E, *et al. Clin Infect Dis* 2024: ePub ahead of print.

RSV

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Nirsevimab for Prevention of Hospitalizations Due to RSV in Infants

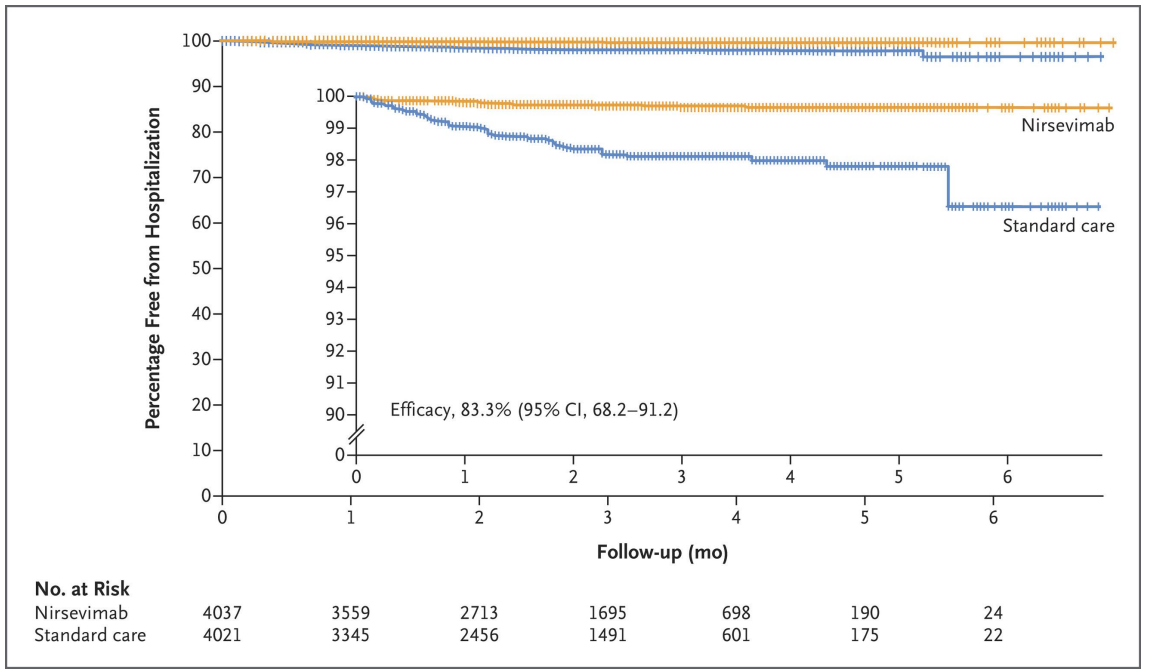
Drysdale SB, et al. N Engl J Med. 2023

POPULATION and INTERVENTION

Infants who were 12 months of age or younger, had been born at a gestational age of at least 29 weeks, and were entering their first RSV received Nirsevimab (single dose) or placebo

PRIMARY ENDPOINT

The primary end point was hospitalization for RSV-associated lower respiratory tract infection



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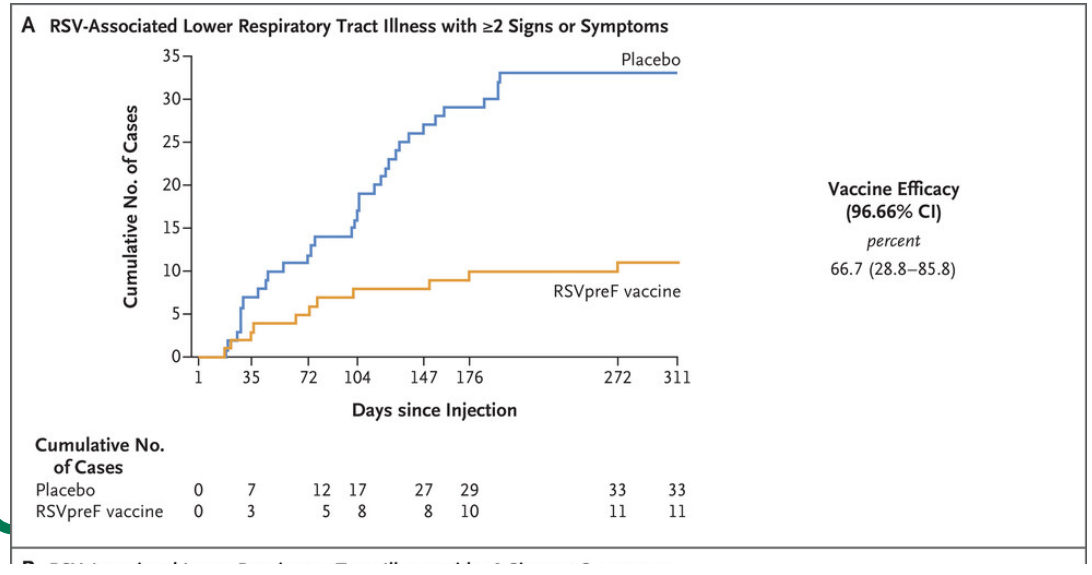
Efficacy and Safety of a Bivalent RSV Prefusion F Vaccine in Older Adults

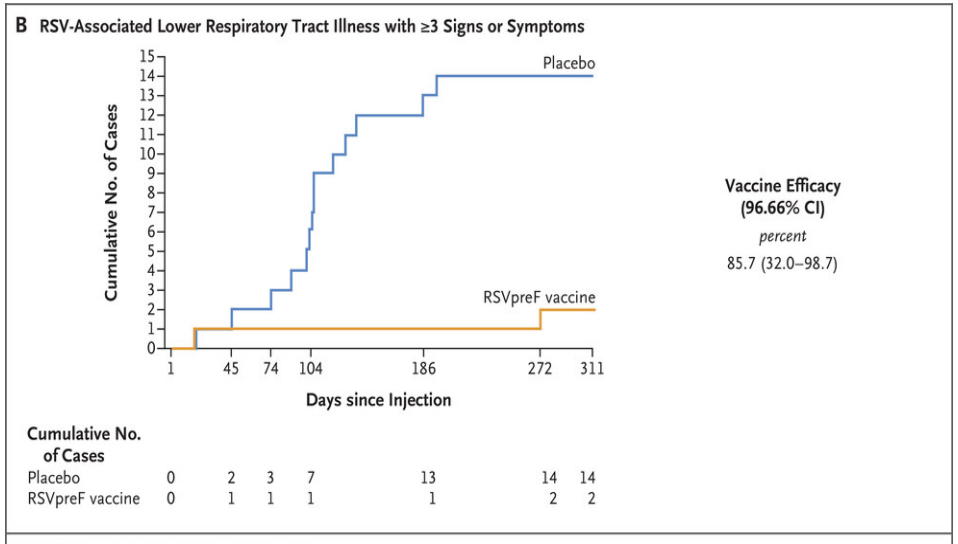
Walsh EE, et al. N Engl J Med. 2023

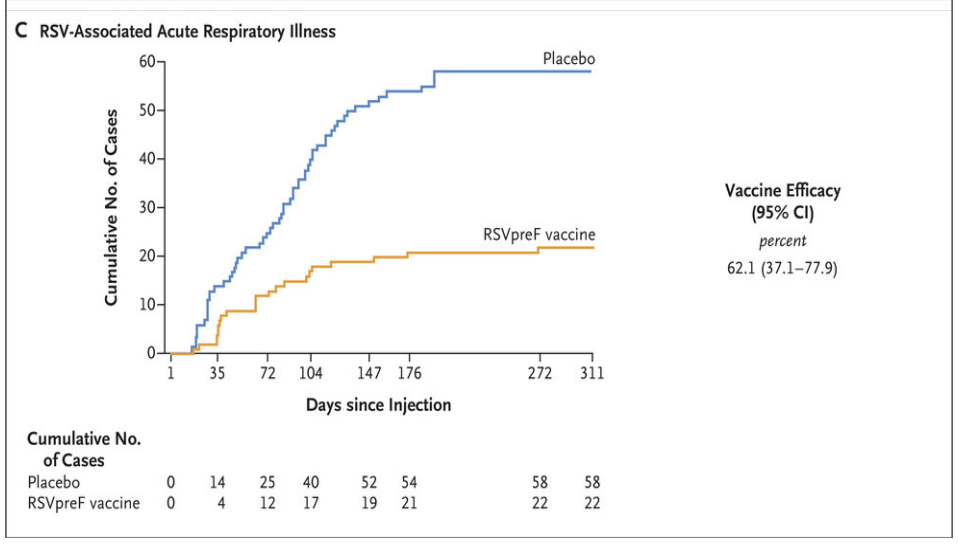
POPULATION:
- adults (≥60 years of age)

INTERVENTION:
- a single intramuscular injection of RSVpreF vaccine at a dose of 120 µg (RSV subgroups A and B, 60 µg each)
- placebo.

ENDPOINT:
- The two primary end points were vaccine efficacy against seasonal RSV-associated lower respiratory tract illness



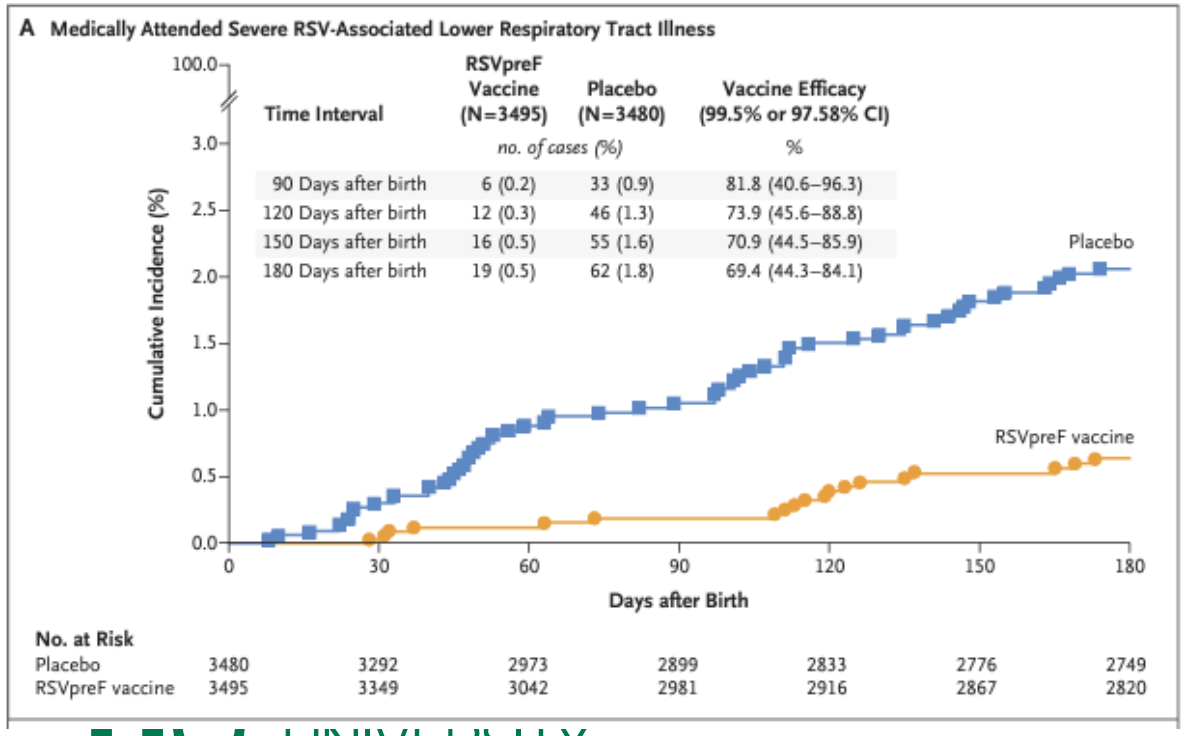


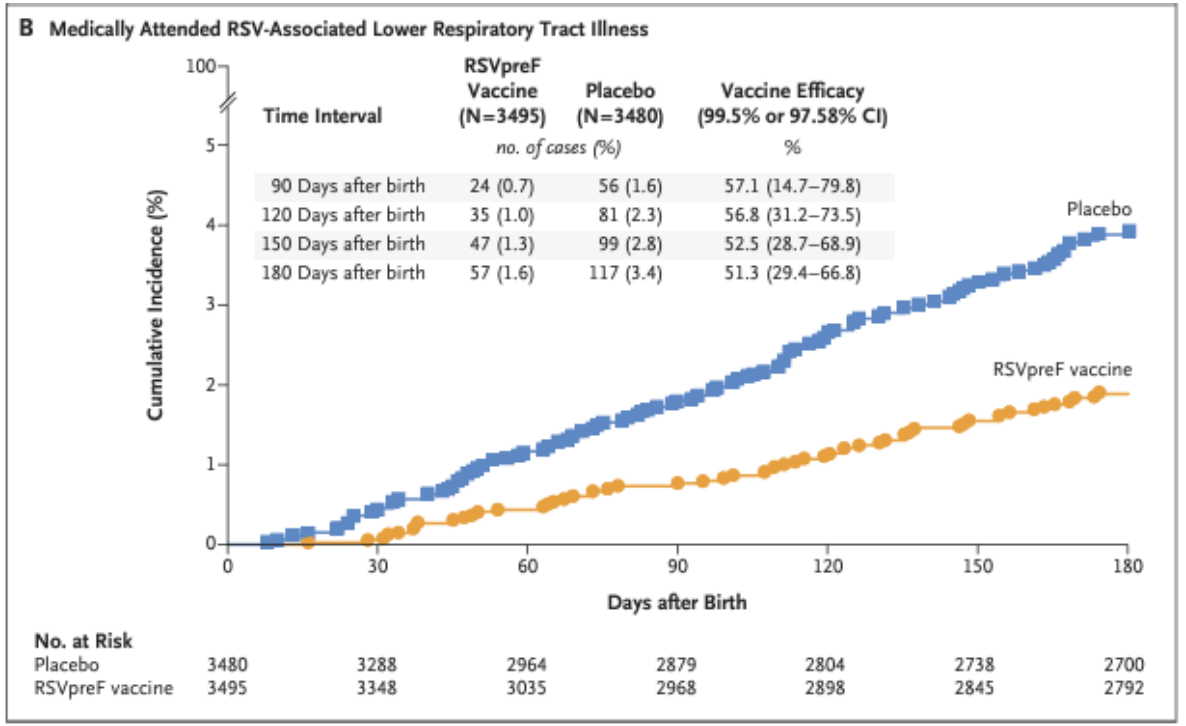


Bivalent Prefusion F Vaccine in Pregnancy to Prevent RSV Illness in Infants

Kampmann B N Engl J Med. 2023 Apr 20;388(16):1451-1464

Pregnant women at 24 through 36 weeks' gestation to receive a single intramuscular injection of 120 µg of a bivalent RSV prefusion F protein-based (RSVpreF) vaccine or placebo





National Library of Medicine
National Center for Biotechnology Information

ClinicalTrials.gov

Recruiting

Study of Obeldesivir to Treat Nonhospitalized Adults With Acute Respiratory Syncytial Virus (RSV) Infection

ClinicalTrials.gov ID NCT06585150

Sponsor Gilead Sciences

Information provided by Gilead Sciences (Responsible Party)

Last Update Posted 2024-10-21

A Phase 2 Randomized, Placebo-controlled Study of the Safety and Efficacy of Obeldesivir to Treat Nonhospitalized Adults With Acute Respiratory Syncytial Virus (RSV) Infection

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INFLUENZA

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Safety and efficacy of onradivir in adults with acute uncomplicated influenza A infection: a multicentre, double-blind, randomised, placebo-controlled, phase 2 trial

- Onradivir (ZSP1273) is a novel anti-influenza A virus inhibitor.
- Participants were randomly assigned (1:1:1:1) into four groups by an interactive web response system:
  - onradivir 200 mg twice per day group,
  - onradivir 400 mg twice per day group,
  - onradivir 600 mg once per day group,
  - placebo group

- The median difference between the onradivir 600 mg once per day group and the placebo group was -22·82 h (p=0·0330). The most frequently reported treatment-emergent adverse event was diarrhoea (71 [42%] of 171),

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Yang Lancet Infect Dis 2024 May;24(5):535-545

TABLE 3 Influenza drugs in clinical trials

Name	Target	IC_{50} (μg/mL)	100% Protection *In vivo*	Adverse event	Usage	Clinical study	References
Peptides and small molecule drugs							
			Target the host				
DAS181	Sialic acid	0.04–0.9 nM	Pre: 0.3 U/treat/day Post: 30 U/treat/day	Elevated ALP	Inhalation	I, II	(87–89)
Nitazoxanide	HA	0.31–1 μM	120 mg/kg/day	Headache	Oral	I, II, III	(90–99)
			Target the virus				
Ribavirin	PB1	5.1	-	Nausea, vomiting, diarrhea	Oral	I, II	(8, 100–105)
Pimodivir	PB2	0.13–3.2 nM	20 mg/kg twice daily	Diarrhea	Oral	I, II, III	(106–110)
Enisamium Iodide	RNA polymerase	-	-	-	Oral	II, III	(111, 112)
Atorvastatin	Envelope	-	-	-		II	(113, 114)
Naproxen	NP	16.7–19.2 μM	10 mg/kg/day	No	Oral	IIb/III	(115, 116)
XC221	-	-	-	-		I, II	-
JNJ4796	HA stalk	0.012–3.24 μM	10 mg/kg twice daily		Oral	-	(117)
Monoclonal antibody drugs							
CR6261	HA stalk	0.12–14.87	Pre: 5 mg/kg Post: 15 mg/kg	-	Intravenous	I, II	(118–122)
CR8020	HA stalk	1.1–13.1	Pre: 3 mg/kg Post: 15 mg/kg	-	Intravenous	I,II	(119)
VIS410	HA stalk	0.3–11	Post: 2.5 mg/kg	Mild diarrhea	Intravenous	I, II	(123–126)
MHAA4549A	HA stalk	1.3–45.1	Post: 100 and 900 μg	Headache	Intravenous	I, II	(127–130)
MEDI8852	HA stalk	0.064	Pre: 1 mg/kg Post: 10 mg/kg	Headache, hypoglycemia, bronchitis	Monotherapy	I, II	(131, 132)
TCN-032	M2	-	-	-	Monotherapy	I, II	(133, 134)
1G01	NA	0.01–2	Pre: 0.3 mg/kg Post: 5 mg/kg	-	-	-	(135)

H5 Bird Flu: Current Situation

Confirmed human case summary during the 2024 outbreak, by state and exposure source

Exposure Source

State	Cattle	Poultry	Unknown	State Total
California	27	0	0	27
Colorado	1	9	0	10
Michigan	2	0	0	2
Missouri	0	0	1	1
Oregon	0	1	0	1
Texas	1	0	0	1
Washington	0	11	0	11
Source Total	**31**	**21**	**1**	**53**