To: 5.1.2e , 5.1.2e . (5.1.2e)'[5.1.2e @amsterdamumc.nl]
From: 5.1.2e 1 5.1.2e
Sent: Wed 3/17/2021 8:35:49 PM
Subject: RE: Epidemiological and evolutionary considerations of SARS-CoV-2 vaccine dosing regimes | Science
Received: Wed 3/17/2021 8:35:49 PM

Thanks zeer informatief zo

From: 5.1.2e , 5.1.2e . (5.1.2e) < 5.1.2e @amsterdamumc.nl>
Sent: woensdag 17 maart 2021 20:41
To: 5.1.2e 1 5.1.2e < 5.1.2e @rivm.nl>
Subject: Fwd: Epidemiological and evolutionary considerations of SARS-CoV-2 vaccine dosing regimes | Science

Interessant draadje tussen 3 experts die ik hoog heb zitten :-)

Begin forwarded message:

From: " 5.1.2e , 5.1.2e ." < 5.1.2e @amsterdamumc.nl>
Subject: Re: Epidemiological and evolutionary considerations of SARS-CoV-2 vaccine dosing regimes | Science
Date: 12 March 2021 at 16:03:30 CET
To: " 5.1.2e , 5.1.2e . 5.1.2e " < 5.1.2e @amsterdamumc.nl>, " 5.1.2e , 5.1.2e . (5.1.2e)" < 5.1.2e @amsterdamumc.nl>, " 5.1.2e , 5.1.2e . (5.1.2e)" < 5.1.2e @amsterdamumc.nl>, "5.1.2e , 5.1.2e . 5.1.2e (5.1.2e)" < 5.1.2e @amsterdamumc.nl>

I think it holds for immunocompromised individuals as well.

Within immunocompromised individuals, like otherwise healthy individuals, the evolutionary advantage of a newly emerging immune escape variant can only be realized if there is substantial virus replication in the presence of the immune selection (assuming immune escape is the only phenotypic advantage for the mutant). If vaccination reduces the probability of infection of immunocompromised individuals, then vaccination would seem beneficial. Similarly, if vaccination reduced duration of infection or helped to constrain the within host virus population size, again vaccination would to be beneficial.

Maybe vaccination could be harmful if it allowed an individual to mount an antibody response but that response had little-to-no impact on the infection… but this seems unlikely, as if they mount a response to vaccination I would think they would be likely to do so to infection as well. This would just take us back to the paragraph above.

5.1.2e | 5.1.2e | Department of Medical Microbiology | Amsterdam University Medical Center, University of Amsterdam

From: " 5.1.2e , 5.1.2e . 5.1.2e " < 5.1.2e @amsterdamumc.nl>
Date: Friday, 12 March 2021 at 15:24
To: " 5.1.2e , 5.1.2e . (5.1.2e)" < 5.1.2e @amsterdamumc.nl>, " 5.1.2e , 5.1.2e ." < 5.1.2e @amsterdamumc.nl>, " 5.1.2e , 5.1.2e . (5.1.2e)" < 5.1.2e @amsterdamumc.nl>, "5.1.2e , 5.1.2e . 5.1.2e (5.1.2e)" < 5.1.2e @amsterdamumc.nl>
Subject: Re: Epidemiological and evolutionary considerations of SARS-CoV-2 vaccine dosing regimes | Science

Hi 5.1.2e

Does the argument in your letter also hold true for the immunocompromised in whom infection/replication can last much longer and who likely show even less effective responses after first (and second) vaccination (and who are prioritized for vaccination in many countries..)? I think one of the prevailing hypotheses for the emergence of the UK and the other new variants still is that these arose in a similar situation?

Thanks!

5.1.2e

5.1.2e 5.1.2e Department of Medical Microbiology & Infection prevention | Amsterdam University Medical Centers
Academic Medical Center, Room 5.1.2e | University of Amsterdam | Meibergdreef 9, 1105 AZ Amsterdam, the Netherlands | phone 5.1.2e

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Van: 5.1.2e , 5.1.2e . (5.1.2e) < 5.1.2e @amsterdamumc.nl>
Verzonden: vrijdag 12 maart 2021 13:57
Aan: 5.1.2e , 5.1.2e . < 5.1.2e @amsterdamumc.nl>; 5.1.2e , 5.1.2e . (5.1.2e) < 5.1.2e @amsterdamumc.nl>; 5.1.2e , 5.1.2e . 5.1.2e (5.1.2e) < 5.1.2e @amsterdamumc.nl>
CC: 5.1.2e , 5.1.2e . 5.1.2e < 5.1.2e @amsterdamumc.nl>
Onderwerp: Re: Epidemiological and evolutionary considerations of SARS-CoV-2 vaccine dosing regimes | Science

Hi 5.1.2e
That all makes sense! Thanks for the clarification.
best
5.1.2e

Van: 5.1.2e , 5.1.2e . < 5.1.2e @amsterdamumc.nl>
Verzonden: vrijdag 12 maart 2021 13:53
Aan: 5.1.2e , 5.1.2e . (5.1.2e) < 5.1.2e @amsterdamumc.nl>; 5.1.2e , 5.1.2e . (5.1.2e) < 5.1.2e @amsterdamumc.nl>; 5.1.2e , 5.1.2e . 5.1.2e (5.1.2e) < 5.1.2e @amsterdamumc.nl>
CC: 5.1.2e , 5.1.2e . 5.1.2e < 5.1.2e @amsterdamumc.nl>
Onderwerp: Re: Epidemiological and evolutionary considerations of SARS-CoV-2 vaccine dosing regimes | Science

The answer depends on whether we're asking about the creation of new variants or the proliferation of already emerged variants. Given the short-lived nature of typical SARS-CoV-2 infections, vaccination (regardless of effectiveness) should primarily serve to slow down the creation of new variants by reducing the number of infections and the size of the within-host virus populations (thus making it less likely for the virus to approach mutation-selection balance). For the proliferation of new variants, because selection is more likely to act at the population level than within-host level, weak vaccine immunity will exert weak selection pressure, intermediate immunity intermediate pressure, strong immunity strong pressure. But in this context, the same is likely to be true for infection acquired immunity – weak immunity, weak pressure; strong immunity, strong pressure.

I think the main risks associated with delayed second dose or no second dose at all are the health consequences for individuals. Without further evidence as to the consequences of modified schedules, I think we should be sticking with vaccination schedules that have been explicitly investigated in clinical trials.

5.1.2e | 5.1.2e | Department of Medical Microbiology | Amsterdam University Medical Center, University of Amsterdam

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From: " 5.1.2e , 5.1.2e . (5.1.2e)" < 5.1.2e @amsterdamumc.nl>
Date: Friday, 12 March 2021 at 12:52
To: " 5.1.2e , 5.1.2e ." < 5.1.2e @amsterdamumc.nl>, " 5.1.2e , 5.1.2e . (5.1.2e)" < 5.1.2e @amsterdamumc.nl>, " 5.1.2e , 5.1.2e . 5.1.2e (5.1.2e)" < 5.1.2e @amsterdamumc.nl>
Cc: " 5.1.2e , 5.1.2e . 5.1.2e " < 5.1.2e @amsterdamumc.nl>
Subject: Re: Epidemiological and evolutionary considerations of SARS-CoV-2 vaccine dosing regimes | Science

Hi 5.1.2e

Thanks for sharing your views on this. How do you think this applies to situations (which might become more frequent), where you have a combination of a moderately efficacious vaccine (Janssen or AstraZeneca), a delayed second dose or no second dose at all, and emerging variants that are less sensitive to vaccine immunity (B.1.351 and P.1 but also B.1.1.7 sublineages acquiring E484K).

best

5.1.2e

Van: 5.1.2e , 5.1.2e . < 5.1.2e @amsterdamumc.nl>
Verzonden: donderdag 11 maart 2021 22:22
Aan: 5.1.2e , 5.1.2e . (5.1.2e) < 5.1.2e @amsterdamumc.nl>; 5.1.2e , 5.1.2e . (5.1.2e) < 5.1.2e @amsterdamumc.nl>; 5.1.2e , 5.1.2e . 5.1.2e (5.1.2e) < 5.1.2e @amsterdamumc.nl>
Onderwerp: Re: Epidemiological and evolutionary considerations of SARS-CoV-2 vaccine dosing regimes | Science

Bill Hanage and I just submitted a letter to the editor about this paper

5.1.2e | Department of Medical Microbiology | Amsterdam University Medical Center, University of Amsterdam

On 11/03/2021, 08:12, "5.1.2e , 5.1.2e . (5.1.2e)" < 5.1.2e @amsterdamumc.nl> wrote:

https://eur04.safelinks.protection.outlook.com/?url=https%3A%2F%2Fscience.sciencemag.org%2Fcontent%2Fearly%2F2021%2F03%2F08%2Fscience.abg8663.full&data=04%7C01%7 5.1.2e %40amsterdamumc.nl%7Cd4cf89428f0949f0988608d8e4d3d431%7C68dfab1a11bb4cc6beb528d756984fb6%7C0%7C 8%7C637510946486162201%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C1000&sdata=D%2BizmX31%2FejVpW04g0sAkU16rz16xonAAqlQlJ8lkC8%3D&reserved=0

Sent by iPhone