Archived Editions (COVID-19 Genomics and Precision Public Health Weekly Update)

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COVID-19 Genomics and Precision Public Health Weekly Update Content

Pathogen and Human Genomics Studies

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- Dominance of alpha and Iota variants in SARS-CoV-2 vaccine breakthrough infections in New York City. (https://pubmed.ncbi.nlm.nih.gov/34375308)
  Duerr Ralf et al. The Journal of clinical investigation 2021 8

  > The efficacy of COVID-19 mRNA vaccines is high, but breakthrough infections still occur. We compared the SARS-CoV-2 genomes of 76 breakthrough cases after full vaccination with BNT162b2 (Pfizer/BioNTech), mRNA-1273 (Moderna), or JNJ-78436735 (Janssen) to unvaccinated controls (February-April 2021) in metropolitan New York, including their phylogenetic relationship, distribution of variants, and full spike mutation profiles

- Evaluation of mRNA-1273 SARS-CoV-2 Vaccine in Adolescents. (https://pubmed.ncbi.nlm.nih.gov/34379915)
  Ali Kashif et al. The New England journal of medicine 2021 8

  > In this ongoing phase 2–3, placebo-controlled trial, we randomly assigned healthy adolescents (12 to 17 years of age) in a 2:1 ratio to receive two injections of the mRNA-1273 vaccine (100 μg in each) or placebo, administered 28 days apart. The primary objectives were evaluation of the safety of mRNA-1273 in adolescents and the noninferiority of the immune response in adolescents as compared with that in young adults (18 to 25 years of age) in a phase 3 trial.

- Randomized Trial of a Third Dose of mRNA-1273 Vaccine in Transplant Recipients. (https://pubmed.ncbi.nlm.nih.gov/34379917)
  Hall Victoria G et al. The New England journal of medicine 2021 8

  > A third dose of mRNA vaccine in transplant recipients had substantially higher immunogenicity than placebo, as determined in our analysis of both primary and secondary trial end points. This trial had short follow-up and was not powered to detect differences in clinical outcomes.

- Effectiveness of Covid-19 Vaccines against the B.1.617.2 (Delta) Variant. (https://pubmed.ncbi.nlm.nih.gov/34289274)
  Lopez Bernal Jamie et al. The New England journal of medicine 2021 7 (7) 585-594

  > Effectiveness after one dose of vaccine (BNT162b2 or ChAdOx1 nCoV-19) was notably lower among persons with the delta variant (30.7%; 95% confidence interval [CI], 25.2 to 35.7) than among those with the alpha variant (48.7%; 95% CI, 45.5 to 51.7); the results were similar for both vaccines. With

the BNT162b2 vaccine, the effectiveness of two doses was 93.7% (95% CI, 91.6 to 95.3) among persons with the alpha variant and 88.0% (95% CI, 85.3 to 90.1) among those with the delta variant. With the ChAdOx1 nCoV-19 vaccine, the effectiveness of two doses was 74.5% (95% CI, 68.4 to 79.4) among persons with the alpha variant and 67.0% (95% CI, 61.3 to 71.8) among those with the delta variant.

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