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Published on 10/22/2020

COVID-19 Genomics and Precision Public Health Weekly Update Content

Pathogen and Human Genomics Studies

- Genomewide Association Study of Severe Covid-19 with Respiratory Failure.
  et al. The New England journal of medicine 2020 Oct (16) 1522-1534

  We conducted a genomewide association study involving 1980 patients with Covid-19 and severe disease (defined as respiratory failure) at seven hospitals in the Italian and Spanish epicenters of the SARS-CoV-2 pandemic in Europe. We identified a 3p21.31 gene cluster as a genetic susceptibility locus in patients with Covid-19 with respiratory failure and confirmed a potential involvement of the ABO blood-group system.
- Individuals with Down syndrome hospitalized with COVID-19 have more severe disease
  L Malle et al, Genetics in Medicine, October 18, 2020

  In this retrospective study of 7246 patients hospitalized with COVID-19, we identified 12 patients with DS. Hospitalized individuals with DS are on average ten years younger than patients without DS. Patients with DS have more severe disease than controls, particularly an increased incidence of sepsis and mechanical ventilation.
- A pooled testing strategy for identifying SARS-CoV-2 at low prevalence
  L Mutesa et al, Nature, October 21, 2020

  We propose an algorithm for pooling subsamples based on the geometry of a hypercube that, at low prevalence, accurately identifies infected individuals in a small number of tests and rounds of testing. We discuss the optimal group size and explain why largely parallel searches are preferred. We report proof of concept experiments in which a positive subsample was detected even when diluted 100-fold with negative subsamples.

Non-Genomics Precision Health Studies

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News, Reviews and Commentaries

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Page last reviewed: Oct 1, 2020
Page last updated: Jan 14, 2021
Content source: Office of Genomics and Precision Public Health, CDC Office of Science

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