

Platform Presentations

Scientific Presentation: Big Data

12 BEING NON-FRAIL AND FREE FROM CARDIOVASCULAR DISEASE REDUCES COVID-19 RISK IN 269,164 OLDER UK BIOBANK PARTICIPANTS

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Background: Older adults are at increased risk of COVID-19, resulting in public health shielding measures for all adults over 70 in the UK. Frailty has been proposed for risk stratification in COVID-19 with limited evidence. Cardiovascular risk factors hypertension, diabetes and raised BMI have been associated with increased COVID-19 risk. We sought to test if non-frail older adults with low cardiovascular risk had reduced COVID-19, to inform targeted shielding policies.

Methods: Fried and Rockwood frailty were ascertained at UK Biobank baseline (2006–2010) and electronic frailty index (eFI) in primary care data to 2017*. A cardiovascular disease risk score (CRS) consisting of smoking status, LDL-cholesterol, blood pressure, BMI, fasting glucose and physical activity was estimated at baseline. Frailty (baseline and eFI; eFI alone) and CRS were tested in logistic models against COVID-19 status and COVID-19 mortality to 14th June 2020 adjusted for demographics and technical covariates.

Results: N=269,164 UKB participants aged ≥ 65 at baseline (≥ 75 years in 2020). 13.9% of COVID-19 positive were non-frail with low baseline CRS versus 41.8% frail with moderate/high CRS. Being non-frail and having low CRS were independently associated with reduced COVID-19. The composite of non-frail with low CRS compared to frail with moderate/high CRS had significantly reduced COVID-19 risk (composite non-frail with low CRS HR 0.61; 95% CI 0.45–0.84; $p=0.0023$; eFI non-frail with low CRS HR 0.16; 95% CI 0.07–0.36; $p\text{ value}=9.9 \times 10^{-6}$) and COVID-19 mortality (composite non-frail HR 0.28; 95% CI 0.10–0.82; $p\text{ value}=0.02$; eFI non-frail 0.07; 95% CI 0.02–0.28; $p\text{ value}=0.00014$).

Conclusion: These results show that the COVID-19 risk in non-frail older adults with low cardiovascular risk was up to 84% lower than in those who were frail with cardiovascular risk factors. This could contribute to future work on stratification of shielding risk in older adults in future COVID-19 surges. *Planned data updates prior to the conference should enable updates to 2020.