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New-onset diabetes following SARS-CoV-2 Omicron infection: a matched cohort study

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Understanding the longer-term health impacts of SARS-CoV-2 infection is essential for informing public health policy. While earlier studies suggested increased diabetes risk after infection, evidence for the Omicron period and the modifying effect of vaccination remains limited and inconsistent. A matched cohort study was conducted using a large-scale linked asset covering over 90% of the Australian population, integrating COVID-19 notifications with demographic information and administrative health records. Individuals aged ≥ 16 years diagnosed with COVID-19 between 15 December 2021 and 31 December 2022 were matched 1:1 to those without COVID-19 by age, sex, and COVID-19 vaccine recency. Cox-models were used to estimate the association between COVID-19 and initiation of diabetes treatment, adjusting for relevant demographic and health-related factors. Negative control outcomes

were assessed. Among 5,736,501 matched pairs followed for a median of 200 days, 45,816 initiated diabetes treatment. Compared to those without COVID-19, individuals with COVID-19 had a 14% higher risk of subsequently initiating diabetes treatment (aHR 1.14 [95%CI 1.12; 1.17]), with the highest risk observed among those hospitalised due to COVID-19 (aHR 2.52 [95%CI 2.23; 2.84]). The risk was also higher for individuals with ≤ 2 COVID-19 vaccine doses compared to those boosted within the last 90 days (aHR of 1.22 [95%CI 1.18; 1.25] vs 1.08 [95%CI 1.04; 1.12]). We found an increased risk of diabetes following SARS-CoV-2 infection during the Omicron dominant period and a protective effect of COVID-19 vaccination. However, the findings should be interpreted with caution considering the potential for unmeasured confounding.

