ADULT RESPIRATORY ILLNESS ATTENDANCES TO A&E DEPARTMENTS: THE PINNACLE OF WINTER PRESSURES

Methods We analysed data from a prospective cohort study of adults (≥18y) hospitalised with acute lower respiratory tract disease, from 1st August 2020 to 31st July 2022. We included patients with acute respiratory infection, a negative SARS-CoV-2 test, and known blood group status. Univariate and multivariate logistic regression was used to assess ABO and RhD influence on the likelihood of cardiovascular complications, and Cox proportional hazards for survival and hospital length of stay.

Results 3.118 adults with known blood group status were hospitalised with SARS-CoV-2 negative respiratory infection. Compared to the national donor population, blood group A and RhD-positive were over-represented in adults hospitalised with respiratory infection and in contrast blood group O were under-represented (both P<0.05).

Overall, morbidity was high: 61.1% (n=1906) patients had a cardiovascular complication, median hospitalisation was 6-days (IQR:3–12) and 30-day mortality was 14.0% (n=437). Univariate analysis revealed that, following hospitalisation, cardiovascular complications did not differ between A vs O (χ² P=0.818) or Rhesus (χ² P=0.575) blood groups: although, this population remained over-represented by group A (χ² P<0.001) and RhD-positive patients (χ² P<0.001) compared to the donor population.

Multivariate analysis found that pneumonia had the strongest effect on cardiovascular complication (OR:1.36, 95%CI 1.17–1.59, P<0.001), increased the hazard of 30-day mortality (HR:3.08, 95%CI 2.39–4.0, P<0.001), and decreased 60-day discharge (HR:0.65, 95%CI 0.60–0.71, P<0.001). Neither ABO blood group nor RhD-status influenced the risk of cardiovascular complications, ICU admission, or 30-day mortality in respiratory infection. However, group A patients were more likely to be discharged in 60 days (HR=1.10, 95% CI 1.01–1.19, P=0.029).

Conclusions We found some evidence that blood group A has a protective effect in SARS-CoV-2 negative respiratory infection, including against longer hospital admission. Further investigation by pathogen may be warranted in the future, and may allow more targeted approaches through stratifying treatment intervention benchmarks based on this varied risk.

Please refer to page A291 for declarations of interest related to this abstract.