

Anti-S antibody levels in patients receiving Sotrovimab

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Background

Neutralising monoclonal antibodies (nMAbs), available in UK for patients meeting “high risk” criteria, reduce the risk of hospitalisation and death in unvaccinated patients with mild/moderate covid.

However, in vaccinated cohorts infected predominantly with omicron variant, immune responses may be sufficiently strong that nMAbs have limited added benefit.

We assessed anti-SARS COV2 anti-S antibody responses in those attending North Central London (NCL) Covid Medicines Delivery Unit (CMDU) for Sotrovimab, and stratified patients by degree of immunosuppression.

Methods

Adult patients attending UCLH CMDU for Sotrovimab infusions from 20/12/21 to 10/05/22 had **anti-s antibody** levels checked pre-infusion, and were asked about **vaccine status, previous covid, and high-risk category.**

Patients in Group 1 were deemed higher risk, and patients in Group 2 were lower risk. Scan QR code for details of stratified groupings.



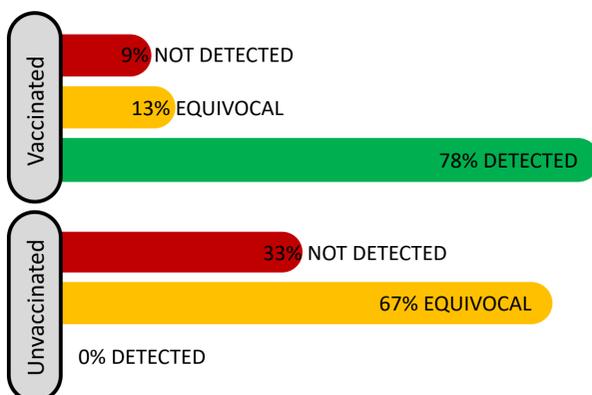
Patients were stratified by degree of immunosuppression into two groups.

Data was extracted manually from electronic patient records and analysed in Microsoft Excel and SPSS.

Results

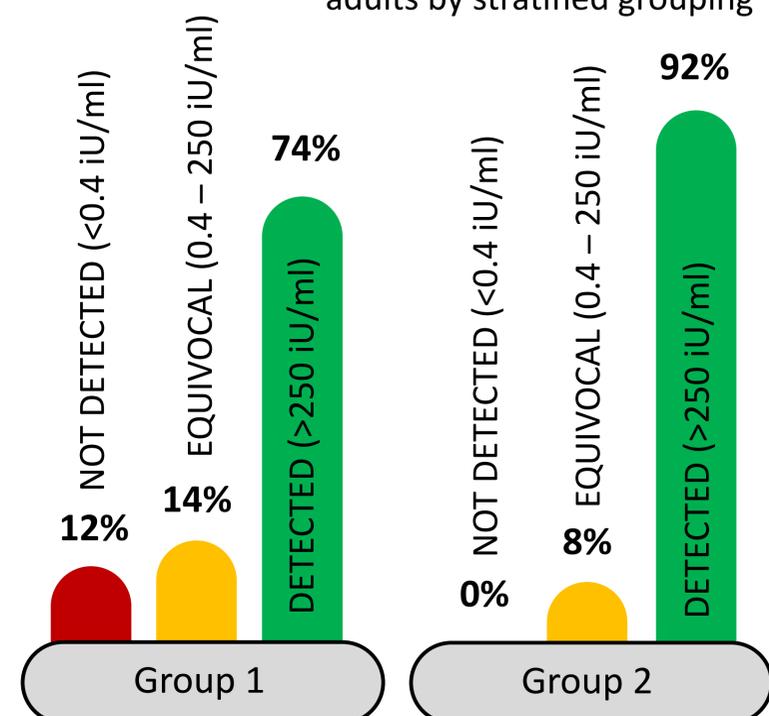
595 adult patients received Sotrovimab. Serology was available for 560. 3.75% (21/560) were unvaccinated (1 vaccine or less) and had antibody levels <250 iU/ml (not detected or equivocal) as shown in fig.1.

Figure 1. Anti-S antibody levels by vaccination status



Antibody levels for vaccinated patients can be seen in fig.2. When stratified by degree of immunosuppression, 12% (50/430) of Group 1 patients had undetectable antibody levels (<0.4 iU/ml), while 0% (0/109) were undetectable in Group 2. Of those with equivocal levels in Group 2, 5 of these 8 had antibody levels >200 iU/ml. A chi-squared test of independence was performed to examine the relationship between stratified group and anti-S antibody level. The relationship between these variables was significant. $\chi^2(3, N=539) = 17.8, p < .001.$

Figure 2. Anti-S antibody levels in vaccinated adults by stratified grouping



Discussion

Patients who meet national criteria for treatment with Sotrovimab can be stratified according to degree of immunosuppression which is reflected in anti-S antibody levels. This may help define which patients would benefit most from nMAbs and provides support for a risk stratification tool. However further data on outcomes, and neutralising efficacy of prior anti-S level on omicron variant, is needed.