2023, surpassing the 2021 national average of 32.5% (see figure 1).

CSSS referral data showed a 44% increase in referrals (16 referrals in May 2022 versus 23 in May 2023).

Conclusion Our novel, web-based smoking cessation tool led to meaningful increases in prescriber confidence, NRT prescription rates and CSSS referrals. We anticipate that further promotion within the hospital and across the ICB, as well as including a QR link to the regional NRT guidelines will expand its use to more clinicians, TTD advisors, AHPs and GPs, thereby promoting better smoking cessation practices within our region.

In the future, we hope to convert the web-based platform to an App to improve accessibility and expand its use to include other UK regions.

Background Saving Babies Lives care bundles and the NHS Long-Term Plan prioritise identifying pregnant smokers (PS) at first outpatient engagement to ensure that every PS identified is referred to a specialist maternity tobacco dependency advisor (mTDA) within 24 hours of first contact.

A maternity smoking cessation pathway, embedded within the adult service, was launched at a busy London teaching hospital in January 2023, developed to facilitate smoking cessation as rapidly as possible in the first trimester. Previously PS were referred directly to local community-based stop-smoking service (LSSS). Now, they receive in-house care in hospital at first booking appointment.

We hypothesised earlier identification and access to referral systems within the trust for PS leads to quicker interventions with pharmacological and behavioural therapy. mTDA support from start of journey results in increased quit rates and access of the service to a more diverse population in an area with one of the highest UK levels of deprivation and health inequality.

Objectives To investigate whether implementing a streamlined referral process for early in-house management of PS improved:

1. Identification within maternity booking, referral to mTDA and then subsequent LSSS engagement
2. Pharmacotherapy prescriptions and PS adherence
3. 4-week quit rates

Methods A virtual clinic created in March 2023 enabled midwives to refer PS more efficiently to mTDA. Following an effective communication campaign, all staff involved in patient care, were encouraged to refer into the new system, implemented and trialled from April 2023. Referral numbers for September 2022 to March 2023 were compared to the post service period.

Results 178 patients, who all underwent carbon monoxide monitoring, were seen mid-Jan to mid-June 2023 within the new service model. The number referred to mTDA increased significantly when compared to before the new service establishment (figure 1).

4-week quit rates doubled from 15%, March to 33%, May 2023.

Conclusion This novel approach of hospital-based mTDA support in early pregnancy demonstrated improvement in quit rates and adherence to national targets, empowering staff with confidence to identify and support PS. We hope to replicate this model for other smokers in an out-patient setting.

'Bad blood’ – Biomarkers and mechanisms in long COVID

AN ALTERED PERIPHERAL BLOOD TRANSCRIPTOME AND IMMUNOPHENOTYPE POST-COVID IS ASSOCIATED WITH INITIAL HOSPITALISATION

C Hughes, M Long, H Keir, YH Giam, T Pembridge, A Gilmour, A Shoemark, D Connell, F Khan, J Chalmers. University of Dundee, Dundee, UK

10.1136/thorax-2023-BTSabstracts.85

Introduction Post-COVID syndrome is a multi-organ disease characterised by persistent symptoms 12 weeks or more following SARS-CoV2 infection. However, the pathophysiology remains unknown and is likely multifactorial due to the heterogeneity of clinical manifestations. The present study aimed to understand the changes and contribution of the systemic immune response in patients with post-COVID syndrome.

Methods Observational study of hospitalised and non-hospitalised participants 3–16 months post-COVID at a single centre (Dundee, UK). Stabilised peripheral blood was processed for mRNASeq. In a participant subset, immunophenotyping of peripheral blood immune cells was carried out using mass cytometry and Maxpar Direct Immune Profiling kit comprising 35 cell-surface markers. Cytobank platform was used for manual gating for mass cytometry data and dimensionality reduction was carried out using the tsNE-CUDA algorithm.

Results 92 post-COVID participants were included (age 56±12.5 years (mean±SD), 46.7% male). Differences in immunophenotype were identified between those initially hospitalised (n=49) or not (n=30). Genes relating to neutrophil activity including neutrophil elastase, MPO, azurocidin-1, defensin alpha 3 (DEFA3) and DEFA4 were upregulated in those who were hospitalised, in addition to lactotransferrin, BPI and CEACAMS, expressed in both neutrophils and monocytes. Those who were hospitalised were more likely to experience dyspnoea/fatigue beyond 12 weeks following acute infection (Fishers exact test, p=0.0021). Further, those with ongoing dyspnoea/fatigue (n=13) had increased neutrophils and a significant increase in T-regulatory cells (Unpaired T-test, p=0.0059), compared to those without (n=7).

Conclusion Post-COVID, an increase in T-cell subsets and neutrophil-associated genes is associated with a more severe initial infection leading to hospitalisation. Neutrophil and T-regulatory cells are further associated with ongoing symptoms post-COVID, suggesting a role for these cell types in post-COVID syndrome.

PLASMA PROTEOMIC SIGNATURES IN PATIENTS WITH RESIDUAL LUNG ABNORMALITIES FOLLOWING INFECTION WITH SARS-COV-2

1EK Denney, 2S Vernardis, 3B Selvarajah, 5R Chapman, 4R Evans, 3A Webb, 3H Mortiga, 3H Hillman, 3M Heightman, 4A Nair, 4J Jacobs, 4RC Chambers, 4JS Brown, 3M Raiser, 1JC Porter. 1University College London, London, UK; 2The Francis Crick Institute, London, UK; 3University College London Hospitals, London, UK; 4The Francis Crick Institute, London, UK; 5University College London Hospitals, London, UK

10.1136/thorax-2023-BTSabstracts.86

Introduction Residual lung abnormalities (RLAs) following acute infection with SARS-CoV-2 are defined as visually scored abnormalities greater than 10% on computed tomography (CT) and are present in 7–11% of hospitalised patients. Understanding immunopathogenic mechanisms driving RLAs is important as they may be progressive and may provide insights into other lung diseases.

Methods Blood samples were collected from 138 patients attending the UCLH post-Covid Service between May and September 2020. Ultra-high throughput liquid chromatography-mass spectrometry (LC-MS) proteomics was used to identify and quantify peptides. Plasma samples (Sul) were processed and analysed in a data-independent acquisition mode and raw data were processed with DIA-NN software, with statistical analysis performed in R.

Results Median time from symptom onset to sampling date was 16 (IQR 12–19) weeks. As 56% were male and median age was 51 (IQR 41–64) years. Median WHO score was 4 (IQR 2–6). 78 (57%) required hospital admission and median ISARIC-4C mortality score was 7 (IQR 5–9). At 3 months post-acute infection 72 patients (52%) had RLAs; the majority (76.4%) were hospitalised and had more severe disease. Unsupervised hierarchical clustering identified 24 differentially expressed proteins. Apolipoprotein C-III, apolipoprotein C-II, retinol binding protein 4, lumican, kallistatin, complement factor H and serpin G1 were increased (p<0.01) in patients with RLAs (figure 1). These proteins correspond to multiple biological processes including lipid metabolism, vitamin transport, extracellular matrix organisation, vascular repair/endothelial function, and inhibition of complement activation.

Conclusion We have identified significantly raised proteins in patient with RLAs at >3 months post COVID-19, which have all been shown to be protective during acute SARS-CoV-2

Thorax: first published as 10.1136/thorax-2023-BTSabstracts.84 on 6 November 2023. Downloaded from http://thorax.bmj.com/ on November 15, 2023 by guest. Protected by copyright.