

TCS/18/47 - Development of biomarkers to identify inhaled antibiotic response in bronchiectasis

Bronchiectasis is a chronic lung condition with no proven treatments. Patients have chronic lung infection and so Inhaled antibiotics offer a promising treatment. Unfortunately, several trials of inhaled antibiotics in bronchiectasis have failed to demonstrate benefit. The reasons for this are not known.

In our pilot work we believe we have identified the answer. We have re-analysed a previous “failed” trial and demonstrated that this study would have been positive if limited to patients testing positive for high levels of bacteria (called high bacterial load). We now need to confirm this critical finding in other trials and identify a way this could be implemented into the NHS.

We will analyse samples and data from patients enrolled in a recent study of an inhaled antibiotic which have been gifted to the Bronchiectasis research team at Dundee University. We will use molecular techniques to measure total bacterial load and compared molecular techniques with traditional bacterial growth in the laboratory and evaluation of the “microbiome”. We hypothesise that patients with higher bacterial load will respond better in terms of symptoms and fewer exacerbations.