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| **Plasma sulphate levels are elevated in bronchiectasis.** |
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| **Introduction/Aim:** Non-cystic fibrosis bronchiectasis is a chronic lung disease characterized by persistent airway infection, inflammation, and irreversible lung damage, leading to symptoms like chronic cough, sputum production, and shortness of breath. Bronchiectasis is prevalent in Australia, especially among children and indigenous populations, and similar trends are observed worldwide.This study examined the role of circulating sulphate levels, regulated by the SLC13A1 sulphate transporter and influenced by dietary intake, in bronchiectasis. High sulphate levels are proposed to be linked to an increased susceptibility to severe infections. Given bronchiectasis is a condition characterised by chronic lung infection, we hypothesized that bronchiectasis patients would have higher plasma sulphate levels and that high levels may correlate with disease severity.**Results:** Plasma samples from bronchiectasis patients (n=39) and healthy controls (n=80) were analysed for sulphate levels. The results showed that bronchiectasis patients had significantly higher plasma sulphate levels compared to healthy controls (BE 326 +/- 72.6 SD vs Control 294 +/- 67.5 SD p=0.027 unpaired t-test). However, it's important to note that the bronchiectasis group was older (BE 67 IQR 53-74, Control 43 IQR 29-52 p=<0.001 Welch’s t test), which might have influenced these findings. Age was found to contribute to 5% of the variation in sulphate levels (R2 0.050, F 7.06 (1,134) p=0.009).This study also explored the relationship between sulphate levels and disease severity, measured by FEV1. While there was an expected negative correlation between sulphate levels and FEV1, this was weak and not statistically significant (R2 0.022, F 0.75 (1,33) p=0.303**Conclusion:** Elevated sulphate levels may impact susceptibility to infections. This study found increased sulphate levels in bronchiectasis patients, but the results could be influenced by age differences between the groups. The clinical significance of these findings remains unclear, and further research is needed to better understand the role of sulphate in bronchiectasis.**Grant Support:** Nil |