|  |
| --- |
| **Small airways dysfunction in asthma measured by impulse oscillometry** |
| Dr Dylan Beinart1, Emily Goh1,Glen Boardman2,Dr Li Ping Chung1 |
| *1Department of Respiratory Medicine, Fiona Stanley Hospital, Perth, Australia* *2Research and Statistical Support Office, Fiona Stanley Hospital, Perth, Australia* |
| **Introduction/Aim:** Small airways dysfunction (SAD) contributes significantly to asthma phenotypes and clinical outcomes but is difficult to measure outside of research settings. Impulse oscillometry (IOS) is a non-invasive, effort-independent test that can measure SAD and detect airway dysfunction in patients with normal spirometry. This study aimed to establish the prevalence of SAD in a subspecialist clinic population and assess the association of IOS parameters with asthma severity and control. **Methods:** We retrospectively reviewed medical records, Asthma Control Questionnaire (ACQ) and Asthma Control Test (ACT) scores, spirometry and IOS measurements of patients seen in a tertiary hospital, severe airways disease clinic between 2019 and 2022. **Results:** Amongst 148 patients, the prevalence of SAD defined by R5-R20>0.07 was 75.7%. SAD increased with severity of airflow obstruction and BMI. R5-R20 value was significantly correlated with risk of exacerbation (p=0.004) and asthma control (p=0.012 for ACT and p=0.028 for ACQ). Patient’s with R5-R20>0.07 showed an odds ratio of 2.60 for exacerbation within 12 months and 2.97 for ACQ>1.5.**Conclusion:** IOS enabled routine measurement of SAD in a specialist asthma clinic. Prevalence of SAD was high and increased with the severity of airflow obstruction. Measurements of SAD correlated significantly with exacerbation risk and symptom control. This data supports future prospective examination of SAD as a treatable trait. **Grant Support:** Funding from Chiesi Australia **Key words**Small airways dysfunction, oscillometry, asthma |