Respiratory Effectiveness Group

Advances in real-life respiratory research

March 2025
WORKING GROUP MEETING AGENDA: Biomarkers in Severe Asthma

Meeting details	
Location	Dorchester Library Room+ MS Teams
Meeting date	Thursday 20th March
Meeting time	5:30 PM
Chair(s)	Amy Chan
Attendees	Therese Lapperre Andy Dickens (OPRI) Kay Roy Ron Dandurand Fulvio Brando Ourania Porichi (Roche) Alexandre Bignon (Roche) Giada Soprani (Roche) John Andrade (Roche) Nicolas Roche Valeria Perugini
Objectives	
1	New Research Ideas
2	Future Actions
3	Final Remarks

Items

New Research Ideas	Amy Chan kindly agreed to chair the WG meeting, where discussions focused on the potential of oscillometry, FENO testing, and blood tests as predictive tools for asthma exacerbations. The group explored emerging evidence suggesting that early detection through these methods could significantly improve patient outcomes, with some studies indicating that symptoms can appear up to a week before a major exacerbation. This led to a broader discussion on whether proactive monitoring using these tools could help patients take action earlier and prevent severe episodes. A key focus was oscillometry and its ability to detect subtle changes in lung function before symptoms become noticeable. There was mention of unpublished data from an Australian research group demonstrating that oscillometry measurements become highly variable in the days leading up to an exacerbation, only to stabilise after a steroid burst. While this pattern has been well-documented in COPD, there has been less formal research on its application in asthma. However, anecdotal evidence strongly suggests that similar fluctuations occur, supporting the idea that oscillometry could be a useful early warning tool for exacerbations. FENO testing was also highlighted as a valuable method for detecting airway inflammation, particularly in eosinophilic asthma. The group noted that while FENO is used in research settings, its integration into routine clinical care remains inconsistent. Alongside this, blood tests measuring eosinophil levels were discussed as another means of identifying inflammation and assessing exacerbation risk. The challenge lies in determining the most effective way to combine these different biomarkers into a predictive model that can be used in clinical practice. **One of the most promising ideas that emerged from this WG meeting was the need to collect real-world data from investigators who routinely perform oscillometry, FENO, and blood tests to assess exacerbations in asthmatic patients.** A suggestion was made to connect with investigators—particularly those in pediatric asthma—who have been using these tools for years. Francine Ducharme was mentioned as someone with extensive experience in this area, particularly with FENO and oscillometry in her pediatric practice in Montreal. Paul Robinson's group in Australia was also identified as having potential data that could be useful for further analysis. The group agreed that pulling together existing datasets would be a critical first step in validating these methods for wider clinical use. With the discussion shifting towards data analysis, the idea of using AI and machine learning to analyse these biomarkers was introduced. If a sufficiently large dataset could be compiled, AI could be leveraged to identify patterns that might not be immediately apparent through traditional statistical analysis. This could help refine early warning systems for asthma exacerbations, allowing for more precise and personalised patient management. While there was considerable enthusiasm around this approach, it was also acknowledged that gathering high-quality data at scale remains a significant challenge.

Future Actions	The group's next steps will involve identifying available datasets, connecting with investigators who regularly conduct these tests, and exploring AI-driven methods for data analysis.
Final Remarks	The group agreed the importance of collaboration, recognising that bringing together expertise across REG WGs would be crucial for making meaningful progress in REG research activities. There was also a renewed commitment to holding more regular online WG meetings to sustain momentum and ensure key research initiatives continue to move forward.