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Breath Virtual Seminars

Respiratory diseases phenotyping via breath analysis

Thursday, October 15, 2020, 16:00 BST (UTC+1)

Keynote speakers:

Prof Salman Siddiqui
Professor of Airways Disease and Respiratory Medicine

Dr Erol Gaillard
Associate Professor in Child Health and Honorary Consultant in Paediatric Respiratory Medicine

Dr Wadah Ibrahim
Clinical Research Fellow.
Respiratory Medicine,
University of Leicester

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EMBER

Respiratory diseases phenotyping via breath analysis

Breath virtual seminars

Abstracts

Dr Erol Gaillard
Associate Professor in Child Health and Honorary Consultant in Paediatric Respiratory Medicine from the University of Leicester

Asthma is the commonest chronic condition that affects children in Europe. In the UK alone over 1 million children have been diagnose with the disease. Despite the high numbers, basic problems remain unresolved such as asthma diagnosis, asthma monitoring, phenotyping and prevention of asthma attacks. One of the reasons for the lack of progress is that invasive investigations are more difficult in children such as blood tests especially when repeat testing is required and sputum testing. Extracting relevant data from breath in the form of volatile organic compounds (VOCs) is therefore very attractive for the diagnosis and management of asthma in children.
Fraction of exhaled nitric oxide (FeNO) is a prime example of a breath biomarker that appears to have a role in asthma diagnosis and phenotyping. Better biomarkers are however needed that are more specific for asthma diagnosis and better predictors of asthma attacks to improve monitoring.
This talk will include
1) brief review what is known about breath biomarkers in asthma with an emphasis on childhood asthma
2) review the technical challenges of reliable breath collection in children
3) discuss future research directions

Dr Wadah Ibrahim
Clinical Research Fellow *from the University of Leicester*

Exhaled breath analysis of volatile organic compounds offers the potential to develop non-invasive, precise and cost-effective diagnostic biomarkers in acutely breathless patients. Despite the novelty of non-invasive breath sampling technology and the growing interest in exhaled breath analysis, there remains a paucity of studies in the acute disease state.
The focus of this presentation will be to go through the role of breath biomarkers in phenotyping respiratory conditions using a combination of discovery and Near-patient breath sampling technologies in acutely breathless patients attending two acute Admissions units within Leicestershire. The indicator diagnoses of interest are (i) Exacerbations of adult asthma and COPD, (ii) community acquired Pneumonia, and (iii) acute heart failure.

In this presentation we will cover:
1. Biomarkers of respiratory airways disease
2. The set-up of the EMBER study and the feasibility of breath collection in acutely unwell patients
3. An overview of the technical challenges of breath research in the acute disease state
4. Recommendations and future directions