

## **Drugs' side effects in lungs 'more widespread than thought'**

Manchester, UK (October 29, 2018) - A systematic review of research has revealed that the toxic effects on the lung of drugs commonly taken to treat a range of common conditions is much more widespread than thought. Though the 27 drugs treating a range of conditions including arthritis, cancer and the heart are successful for most patients, doctors, say the team, need to be more aware of the potential risks to their respiratory systems.

The research was carried out by academics at the Universities of Manchester, Leeds, and Sheffield as well as clinicians at NIHR Manchester Biomedical Research Centre, Royal United Hospitals Bath NHS Foundation Trust and Sheffield Teaching Hospitals NHS Foundation Trust and the European Organisation for Research and Treatment of Cancer (EORTC).

The study, which looked at 6,200 patients' data from 156 papers is published in the Journal of Clinical Medicine.

The team are part of a €24 million project funded by the European Union and the European pharmaceutical industry's Innovative Medicine Initiative which is developing imaging techniques for the management of drug-induced interstitial lung disease (DIILD). It is co-led by EORTC and Bioxydyn Ltd, a University of Manchester spin-out company.

Though DIILD can cause difficulty breathing, inflammation and fibrosis, the risk sometimes only becomes apparent after the drugs have been in use for some years.

Though the team say clinicians are hindered because most of the papers they reviewed were of low or very low quality. Between 4.1 and 12.4 million cases of DIILD per year were reported worldwide accord to the review.

- And the review also found that DIILD accounted for around 3-5% of all interstitial lung disease cases.
- In some of the studies, mortality rates of over 50% were reported and overall, 25% of all the patients studied died as a result of respiratory symptoms.
- Steroids were the most common drug used to treat DIILD, but no studies examined their effect on outcome.

John Waterton, a Professor of Translational Imaging from The University of Manchester, was on the research team. He said: "Though this area is not well researched, we can say that the side effects of drugs on the lung are much more widespread than previously thought.

"We do know it affects a considerable number of people, which is why we want to develop better imaging tests to pick up any lung problems before they become serious.

"It's important to stress that patients can safely continue to take their medication - but it's also important that doctors monitor and assess them closely for side effects in the lung."

On the team is also Dr Nazia Chaudhuri, honorary senior lecturer at The University of Manchester and a consultant physician at Wythenshawe Hospital, part of Manchester University NHS Foundation Trust, who has a specialist interest in interstitial lung disease.

She said: " Doctors need to be aware and vigilant to the possible lung toxicities and harm that can be caused by some drugs. With newer drugs coming on the market this is an increasing yet under recognised problem and we need better ways of detecting these side effects before they cause harm."

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The paper 'Drug-Induced Interstitial Lung Disease: A Systematic Review' is published in the Journal of Clinical Medicine and is available here.

The common drugs with DIILD liability in the review are: Bleomycin, Gemcitabine, Erlotinib, Gefitinib, Panitumumab, Cetuximab, Everolimus, Temsirolimus, Sirolimus, Ipilimumab, Nivolumab, Pembrolizumab, Atezolizumab, Avelumab, Durvalumab, Irinotecan, Pemetrexed, Methotrexate, Infliximab, Etanercept, Adalimumab, Golimumab, Leflunomide, Amiodarone, Nitrofurantoin, Distamycin and Carbamazepine.

The NIHR Manchester Biomedical Research Centre (BRC) is hosted by Manchester University NHS Foundation Trust and The University of Manchester, in partnership with The Christie NHS Foundation Trust and

Salford Royal NHS Foundation Trust. The NIHR has invested £28.5m in Greater Manchester over five years from 1st April 2017 under the NIHR BRC Award Scheme. [www.manchesterbrc.nihr.ac.uk](http://www.manchesterbrc.nihr.ac.uk)

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