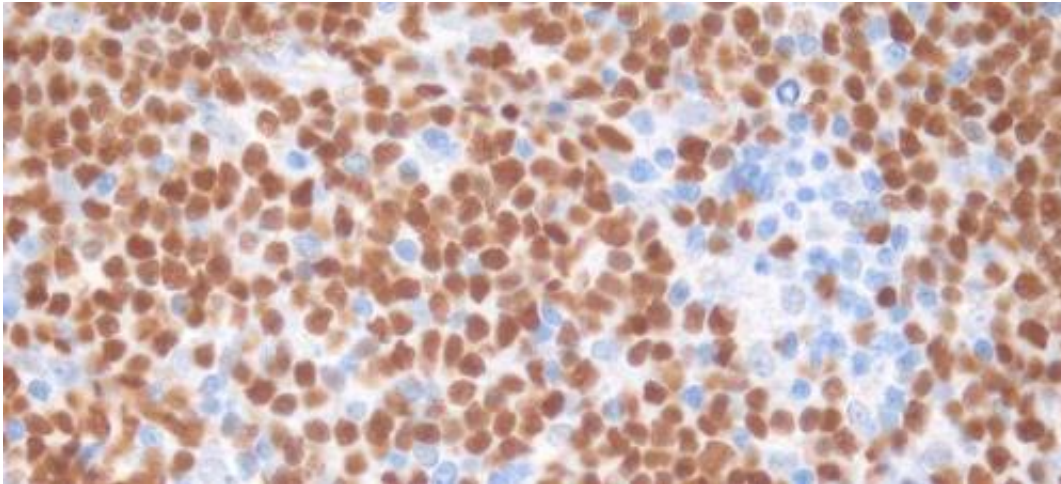


Big data to help blood cancer patients

May 20 2014, by Chris Bunting



Lymphoma cells. Credit: Leukaemia & Lymphoma Research

A pioneering database at the University of Leeds will help match patients with certain types of blood cancers to the best treatments.

The new resource, funded by the charity Leukaemia & Lymphoma Research, will store cancer cell samples and anonymous medical records of patients with non-Hodgkin [lymphoma blood cancers](#) in the Yorkshire region, allowing doctors access to richly detailed information about similar previous patients when treating new cases.

It is a world-leading example of the use of "big data" to improve outcomes for patients and a breakthrough for the treatment of non-Hodgkin lymphoma, which relies on tailoring interventions closely to

particular patients.

David Westhead, Professor of Bioinformatics at the University of Leeds, said: "It is increasingly clear that cancer in general and lymphoma in particular is a highly variable disease. Individuals previously diagnosed in the same broad categories may have diseases that are quite different when you look at the fundamental biology of their cancers. This database enables us to take a step towards more individualised treatment."

Non-Hodgkin lymphoma is diagnosed in about 10,000 people a year in the UK, making it the sixth most common form of cancer, and normally appears as a solid tumour in glands called lymph nodes.

One of the key challenges in treating it is its diversity. Non-Hodgkin lymphoma can be divided into up to 40 different diseases, each of which is treated differently. Even within these subcategories, there can be very significant differences between individual patients, with different genetic faults in an individual's lymphoma cells dictating whether certain drugs will be effective or not.

The database and data mining techniques developed by researchers at the University of Leeds' Faculty of Biological Sciences are expected revolutionise treatment.

Doctors will be able to cast aside traditional disease categories, which were defined when scientists couldn't look at cells at a molecular level, and search the database for previous patients whose lymphoma has similarities at a biological level to newly diagnosed patients.

Knowing which of the various possible treatments were most successful in similar patients in the past will help guide treatment for current patients.

Professor Westhead said: "It is very important that what we learn from treating [lymphoma patients](#) can be used in the future. We believe this new approach will improve on the current practice of assigning patients to rigid disease categories that in reality are overlapping."

Dr Matt Kaiser, Head of Research at Leukaemia & Lymphoma Research, which is providing £250,000 to support the project, said: "We already know that lymphomas are highly variable in their prognosis and response to standard treatments. By intelligently linking the patient's biology with clinical outcome, future [patients](#) will benefit from smarter diagnosis, more accurate prognosis and a more tailored treatment course. This is a pioneering approach that may have ramifications for how we view and treat all cancers."

Provided by University of Leeds

Citation: Big data to help blood cancer patients (2014, May 20) retrieved 4 May 2024 from <https://medicalxpress.com/news/2014-05-big-blood-cancer-patients.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--