

Chemo-free treatment a possibility for leukemia / lymphoma

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Patients with terminal forms of leukaemia and lymphoma who have run out of treatment options could soon benefit from a new drug, which not only puts an end to chemotherapy and has virtually no side effects but also improves a patient's life expectancy and quality of life.

It has been described as a breakthrough in cancer treatment by a leading professor in haematology, who presented the findings of the Phase 1 trial at an international conference in New Orleans in December 2013.

Professor Simon Rule, Consultant Haematologist at Plymouth Hospitals NHS Trust and researcher at Plymouth University Peninsula Schools of Medicine and Dentistry, has led the first worldwide study of its kind into a new class of BTK (Bruton's Tyrosine Kinase) inhibiting drugs at Derriford Hospital in Plymouth, describes it as 'exciting' and 'a transformation' in the treatment for patients with these conditions.

Professor Rule has observed significant improvements in his patients. The first four patients in the world to receive this drug were treated in Plymouth, starting in September 2012. Since then, more than 30 patients worldwide are receiving this treatment, with positive results.

Professor Rule said: "The astonishing thing about these drugs is that they have virtually no [side effects](#), which is unprecedented from my experience. In some patients the effects are immediate. Patients with lots of symptoms, particularly those with lymphoma, will feel better the next day after taking the medication.

"The UK is at the forefront of this drug development and all of the studies into these drugs are being run from Plymouth. This will completely change the way we manage these diseases. We have access to the next generation of the drug to be part of the next trial phases. This is not a cure for cancer but it will mean we are significantly improving our patients' [life expectancy](#) and quality of life; similar to managing a chronic condition. I have yet to come across another class of drugs in my career that has been so successful for leukaemia or lymphoma."

Current therapies, such as chemotherapy, intensive chemo-immunotherapy (chemotherapy combined with immunotherapy) or stem cell transplant are effective but due to the aggressive nature of these cancers, patients always relapse and eventually run out of options.

These drugs work by inhibiting Bruton's [tyrosine kinase](#) (BTK), a protein which plays a role in the signals that cause growth in cancerous cells. Blocking this causes the cancerous cells to die but normal cells are unaffected.

With an average survival rate of four to five years, the new developments in BTK inhibiting drugs could dramatically improve the life expectancy and quality of life for patients with terminal forms of leukaemia and lymphoma who have run out of other [treatment options](#).

David Hodge, 74, from Plymouth, was the first in the world to be treated with this new medication and more than a year on from the start of the trial is feeling the benefits.

Prior to starting the trial in September 2012, David had only several months to live. This was due to his immune system not functioning and also following years of treatment he had become resistant to all other treatments.

Professor Rule continued: "To be brutal, David had no other option. He was resistant to other forms of treatments so I am just pleased to have been able to access this drug and offer it to him."

When asked whether this was the outcome he imagined the trial to have a year ago, Professor Rule said: "I have done a lot of drug trials in my career; this drug and its predecessor, which I was fortunate to be the first person in Europe to use - they are transformational as far as I am concerned."

"So, did I expect this to happen? No, but I was hopeful that this drug would be more effective than similar drugs we could trial."

"Normally what you expect with [trials](#) like this is that you treat a patient for a period of time and often what happens is the drug doesn't work; the side effects make you stop the trial or the disease doesn't respond for very long. What is very exciting about this drug is the effects are continuing and there are no emerging side effects."

Professor Rule is now planning to run a UK study from Plymouth using the latest BTK drug in a trial against standard chemotherapy.

"The next stage will be chemo-free treatment. We've been talking about it for years and now it might be a reality," he explains. "This has the very real prospect of changing the management of these difficult forms of cancer."

Professor Simon Rule runs the only mantle cell lymphoma clinic in Europe, with one other clinic in America. As a leading clinician in [mantle cell lymphoma](#), [patients](#) have come from around the world to seek out Professor Rule's expertise.

David Hodge's Story

David Hodge, 74, from Plymouth, was the first person in the world to be treated with this new medication and 12 months on from the start of the trial is feeling the benefits.

Prior to starting the trial in September 2012, David had only several months to live. This was due to his immune system not functioning and also following years of treatment he had become resistant to all other treatments.

Speaking on the first day of starting to take the BTK drug in September 2012, David explained what it meant to him to be taking part in the trial: "I've had three treatments, one chemo and two other treatments and although I've now had CLL (chronic lymphocytic leukemia), for 17 years, which is remarkable really, of course life is very precious and if my life can be extended I'd give God the thanks for that.

"I think with any new trial or drug, or with chemotherapy there's a little bit of trepidation but I'm a Christian and I prayed about this and I got great peace about it. I just felt, even if it proves at this moment, to be of little use to me; I trust that with 'fine tuning' it will prove to be significant to those taking the drug later on."

On the first night David stayed in hospital and has returned for regular check-ups and telephone calls with the nursing team, who have been on hand 24/7.

Meeting up with him one year on from his [treatment](#) and he is doing remarkably well. We asked him how he felt when Professor Rule had said he had a drug for him to try. He told us: "Extremely grateful. Quite frankly, I wasn't as aware, as I am now, how critical my situation was and that this really was the only way out. Had I have known, I would have been more concerned but I am really grateful for this opportunity."

David describes how he's had no problems at all with the [drug](#).

"It's just like, well it's better than taking paracetamol. I take the medication first thing in the morning at 6 'o' clock and then go back to bed for an hour. Afterwards I get up and get on with my day; I'm fighting fit. I've had no problems, no side effects, nothing."

David added: "I'm delighted with Birch Ward and the haematology department here because they really are top professionals, I'm completely confident in what they're doing and I'm quite happy to continue with the trial."

Provided by University of Plymouth

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