



RESEARCH

INFORMATION

Development of a rapid test to improve the clinical management of Hodgkin lymphoma



AIMS

This study had three main aims:

- To develop a rapid test for the molecule CCL17, a marker of disease activity in Hodgkin lymphoma
- To show, using samples from patients with Hodgkin lymphoma, that the rapid CCL17 test and the current, standard test for CCL17 give similar results
- To collect and test blood samples from patients with Hodgkin lymphoma before, during and after treatment to show how the test can be used to monitor response to treatment



KEY FINDINGS

- We developed a rapid test for CCL17 but it was not sensitive enough for use in clinical practice – further work is required to increase sensitivity. Testing of clinical samples was therefore performed using an available test for CCL17, which has a much longer turnaround time.
- We successfully set up a Scotland-wide system for collecting and testing blood samples from Hodgkin lymphoma patients before, during and after treatment, confirming that the study was feasible and that clinicians were keen to recruit patients to this study
- Results obtained so far confirm that high CCL17 levels after start of therapy indicate a poor response to treatment



WHAT DID THE STUDY INVOLVE?

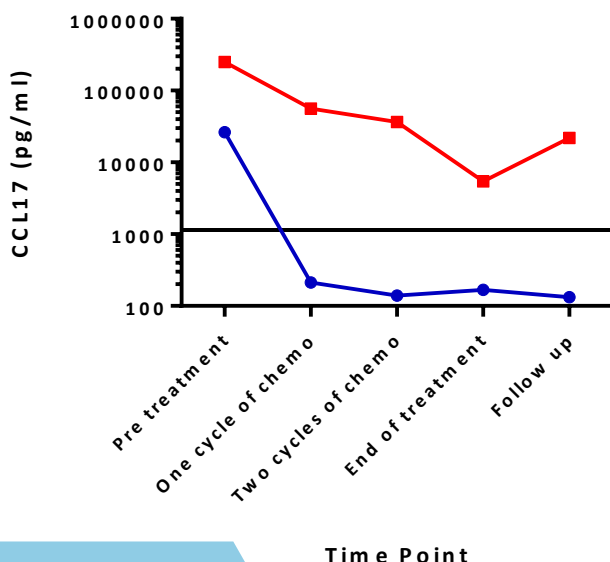
The study was in two parts.

- In the first part, we developed a rapid test for CCL17. This work was subcontracted to Abingdon Health, a company with expertise in developing tests for rapid diagnosis. These tests look similar to home pregnancy tests. We want a rapid test for CCL17 so that results are available quickly and can be used to make clinical decisions at outpatient clinic visits. We developed a test but it was not sensitive enough for use in clinical practice. We believe that it will be possible to improve the test sensitivity and will continue to pursue this worthwhile goal.
- In the second part, we successfully set up a multicentre Scotland-wide trial of CCL17 as a marker of response to treatment in Hodgkin lymphoma. We collected blood samples from newly diagnosed Hodgkin lymphoma patients before, during, and after treatment. We aimed to recruit 80 patients and at the end of the study had successfully recruited and collected samples from 67 patients. The shortfall in numbers reflected the time taken to initiate recruitment at all sites. CCL17 measurement, using the available standard test, rather than the rapid test, is being performed but results are not yet complete.



WHAT WERE THE RESULTS AND WHAT DO THEY MEAN?

- We developed a rapid test for the biomarker CCL17 but it was not sufficiently sensitive for our purpose. We are continuing to pursue this goal, as a rapid test that can be used to test single samples has clear advantages over the currently available test, which assays samples in batches, for use in the clinic.
- We confirmed that it was feasible to run a Scotland-wide study of CCL17 as a marker of response to treatment in Hodgkin lymphoma, with good recruitment and quality sample and data collection.
- Our results obtained using the available CCL17 test support the idea that CCL17 testing can be used to identify patients who are not responding to treatment, as shown in the figure below.



CCL17 levels in two representative patients with Hodgkin lymphoma with different outcomes

Levels of CCL17 before, during and after treatment are shown for two patients with Hodgkin lymphoma. The grey line indicates the upper limit of normal CCL17 levels. Both patients had high levels of CCL17 before treatment. CCL17 levels in the patient shown in blue (circles) fell to normal levels after one cycle of chemotherapy and remained low; this patient remains well. In contrast, CCL17 levels in the patient shown in red (squares) never returned to normal levels. At end of treatment, the clinical findings suggested the patient was in complete remission but relapse was suspected at the follow up visit. The CCL17 results suggest that this patient did not have an optimal response to treatment and was not in remission at end of treatment. Availability of the CCL17 levels in real time would have changed the clinical management.



WHAT IMPACT COULD THE FINDINGS HAVE?

- Our findings provide further evidence that CCL17 is a good indicator of disease activity in Hodgkin lymphoma and could be used for:
 - early diagnosis
 - monitoring response to treatment
 - early detection of relapse
- Monitoring CCL17 levels will lead to improved patient management through:
 - early identification of treatment failure and the need for a change of therapy
 - early identification of an optimal treatment response and prevention of late side-effects through overtreatment
- Monitoring of CCL17 levels may lead to reduced NHS costs by reducing the number of PET scans performed and by improving treatment decisions



HOW WILL THE OUTCOMES BE DISSEMINATED?

Outcomes will be disseminated through:

- publication in peer-reviewed journals
- presentation at scientific meetings
- discussion of the data at the NCRI Hodgkin lymphoma subgroup meetings
- through interaction with patient support groups, such as Lymphoma Action and the Lymphoma Coalition – see my presentation of these data and other features of Hodgkin lymphoma at: <https://www.youtube.com/watch?v=n5KMrk7dPgo>



CONCLUSION

CCL17 testing provides a cheap and simple way of monitoring disease activity in Hodgkin lymphoma, and a rapid CCL17 test would allow treatment decisions to be made quickly at multiple time points throughout the patient journey.



RESEARCH TEAM & CONTACT

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Additional Information

Recruitment ended on 31/03/2018 and sample collection will end on 30/09/2018
Funding received £266k