Detecting lingering brain cancer cells before a tumour grows back

Project title: Biomarkers of minimal residual disease in ependymoma for early relapse diagnosis

Lead researcher: Dr Alison Whitby, University of Nottingham

Project Stage: Starting soon (August 2024)

Funded by: CCLG and CCLG Special Named Fund Little Lady A

ABOUT THE PROJECT

Ependymoma is a type of brain tumour that affects around 30 children per year in the UK. Whilst many children can be successfully treated, the cancer comes back around half of the time. This is because some of the cancer cells were not killed by treatment. If doctors could diagnose relapsed ependymoma sooner, children could start treatment earlier.

This could be achieved with biomarkers. These are tiny molecules released by the cancer cells as they create energy and build components for the cell. If researchers could detect these biomarkers, they could show that there are living cancer cells in the brain.

Dr Alison Whitby and the team at the University of Nottingham have already found biomarkers in cerebrospinal fluid (CSF), a liquid that surrounds the brain and spinal cord. These biomarkers are present at very different amounts in ependymoma than they are in healthy CSF.

In this project, Dr Whitby will investigate whether nine biomarkers can be found in CSF from relapsed ependymoma patients. She will also look at when during treatment these relapse biomarkers are first identified, and how many of the markers there are. If the biomarkers are found only in the patients who relapse, only after the end of treatment and only in relapsed tumours, the team can be sure that the presence of these biomarkers is connected to a relapse.

Dr Whitby plans to create a test which can tell doctors whether a patient is relapsing after their treatment has ended. This would help diagnose relapsed ependymoma faster, which could allow earlier treatment and perhaps a better outcome for the child. The biomarkers identified in this project could also point to important metabolic processes for ependymoma cells that could be targeted with new treatments.

Children's Cancer and Leukaemia Group
Century House, 24 De Montfort Street, Leicester LE1 7GB
Registered charity in England and Wales (1182637) and Scotland (SC049948).

0333 050 7654
info@cclg.org.uk
www.cclg.org.uk

ChildrensCLG
CCLG_UK
CCLG_UK