CCLG RESEARCH PROJECT UPDATE

Learning to predict high-risk rhabdomyosarcoma at diagnosis to improve outcomes for children and young people

Project title: Defining Molecular Markers of High-Risk in Rhabdomyosarcoma cells and their Tumour Microenvironment to Improve Patient Outcomes

Lead researcher: Professor Janet Shipley, The Institute of Cancer Research

Project Stage: Starting soon

Funded by: Funded by CCLG and CCLG Special Named Funds including Pass The Smile For Ben, Be More Ruby, Just George, Team Jake, Jacob's Join, Hattie's Rainbow of Hope, Cohen's Fight and The Jenni Clarke Fund

ABOUT THE PROJECT

Doctors separate rhabdomyosarcoma patients into different risk groups so that they can give the right amount of treatment. This is based on where in the body the cancer is, it's size, and whether the cancer cells have a fusion between genes called PAX3 or PAX7 and FOXO. However, there is currently no way to determine how at risk most patients are if they do not have one of these fusion genes.

In this project, Professor Janet Shipley at The Institute of Cancer Research will look for a way to predict risk for PAX-FOXO1 fusion-negative rhabdomyosarcoma at diagnosis. Her research team has previously found evidence that tumours with low oxygen levels, few blood vessels, and high amounts of certain genes are linked to poorer outcomes. They have now identified biological markers representing these features which can be simultaneously tested in samples from patients that were used for diagnosis and are available for study.

The researchers will map the markers onto over 100 rhabdomyosarcoma tumour samples. The data from this, such as how the markers are distributed in the tumour and the amount, will be compared to patients' responses to treatment. The team will be using state-of-the-art technology and AI to analyse this data and identify the best prognostic markers.

After validation, Professor Shipley plans to include the best markers in the current FaR-RMS clinical trial. She hopes that this work will go on to spare low-risk rhabdomyosarcoma patients unnecessary toxicity, and improve the treatment options for high-risk patients.

Jacob's Join
For research into rhabdomyosarcoma

COHEN'S FIGHT
RAISING FUNDS FOR CHILDHOOD CANCER

Be more Ruby

HATTIE'S
RAINBOW OF HOPE APPEAL

Pass The Smile

Just George

THE JENNI CLARKE FUND

Team Jake

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