Investigating a new way of treating poor-prognosis rhabdomyosarcoma

Project title: Evaluating a novel protein methyltransferase inhibitor for poor-prognosis rhabdomyosarcoma therapy

Lead researcher: Dr Karim Malik, University of Bristol

Project Stage: Complete (March 2021)

Funded by: CCLG and Team Jake, The Jenni Clarke Fund, Angus's Door and Ollie's Star

ABOUT THE PROJECT

Rhabdomyosarcoma is the most common type of soft tissue sarcoma in children and young people. Although most rhabdomyosarcoma patients have a good response to combined therapies currently used in the clinic, they can still suffer from quite severe side-effects. Another form of rhabdomyosarcoma known as fusion-positive alveolar rhabdomyosarcoma has very poor survival rates. Together this shows the need for new potent and specific drugs to improve the standard of care for rhabdomyosarcoma patients.

The research team at the University of Bristol, led by Dr Karim Malik, are currently assessing drugs which stop a protein known as PRMT5 from working. These drugs are currently used for neuroblastoma, another childhood cancer with poor prognosis. The researchers believe that this protein is also involved in rhabdomyosarcoma and can show that drugs stopping (inhibiting) PRMT5 can stop the growth of rhabdomyosarcoma cells and kill them.

This project will further establish that inhibiting PRMT5 could be an effective alternative/addition to current treatments. The pharmaceutical industry does not always prioritise development of drugs for childhood cancers. However, large pharmaceutical companies are already invested in developing PRMT5 inhibitors. Dr Karim Malik believes that this study has the potential to help treat rhabdomyosarcoma patients in the near future.

RESULTS

The research team has evaluated this new treatment for rhabdomyosarcoma and found it to be very effective in stopping cell growth. Further analysis has suggested that combining the new treatment with other drugs that work in different ways may be even more effective. Their work also identifies other future targets for new treatments.

CCLG RESEARCH PROJECT UPDATE

WHAT'S NEXT?

Due to the pandemic, this project experienced a few delays, but the researchers plan to submit a follow-up study for funding. They currently have an independently funded master's degree student exploring some of the new insights generated by this project.

This project was funded by Special Named Funds at Children's Cancer and Leukaemia Group raising funds for research into rhabdomyosarcoma.

Children's Cancer and Leukaemia Group
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