2018 Translational Research Innovation Awards

Project Title:

Testing a novel drug to inhibit a lethal subtype of prostate cancer

Lead Investigator:

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Clinical Trial design and recruitment
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Project Summary:

This project aims to test a novel drug, CBL0137, for a particularly aggressive and therapy resistant form of prostate cancer known as Neuroendocrine prostate cancer. Current clinical therapies are not effective at inhibiting the growth and spread of this subtype of prostate cancer and men diagnosed with neuroendocrine prostate cancer have a very poor prognosis.

The drug CBL0137 is currently in clinical trial testing in kids with neuroblastoma that have elevated levels of a protein called, N-myc. Recent large scale international studies in prostate cancer have identified the N-myc protein to also play an important role in the development and aggressiveness of neuroendocrine prostate cancer. As such, we will undertake the first ever studies to investigate if CBL0137 can also effectively inhibit neuroendocrine prostate cancer, as it has shown great promise in neuroblastoma's also harbouring the N-myc protein.

We will test CBL0137 in laboratory based studies for inhibiting the growth of prostate cancer cell lines as well as in mice transplanted with patient-derived neuroendocrine prostate cancer. The findings from this intial pilot study will then guide the design of further preclinical and clinical trial testing of CBL0137 as a new therapeutic option for men diagnosed with neuroendocrine prostate cancer.

Research Benefits:

Neuroendocrine prostate cancer (NEPC) is associated with poor clinical outcome and advanced disease. While the incidence of primary/localised prostate cancer with neuroendocrine features is only 1 %, this increases to 25-30 % in lethal stage disease. Despite the development of more aggressive therapies, the prognosis for patients with NEPC remains dismal with a median overall survival of ~ 7 months. The outcomes from this project are likely to identify a new therapy (the drug CBL0137) that can inhibit the growth of NEPC and provide the first effective targeted therapy for this disease subtype.

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