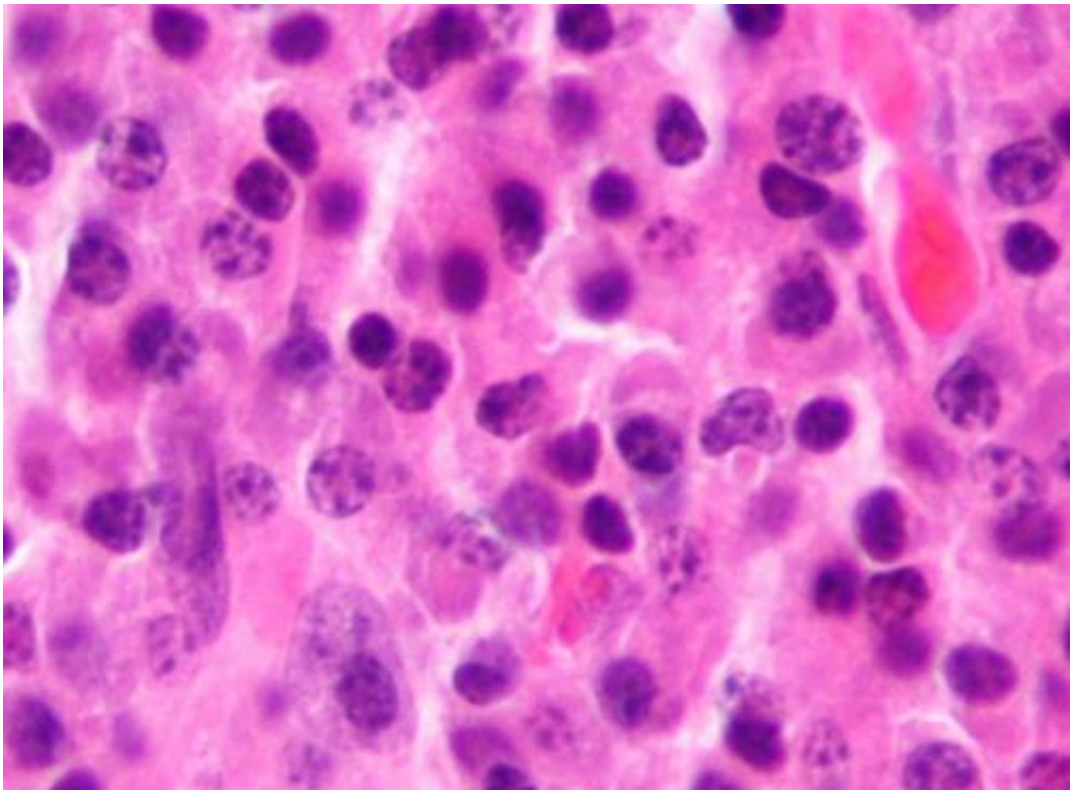
Medical Xpress

Q&A: Thesis on new treatment approaches for multiple myeloma

June 9 2023



Micrograph of a plasmacytoma, the histologic correlate of multiple myeloma. H&E stain. Credit: Wikipedia/CC BY-SA 3.0

Maria Karvouni from the Center for Hematology and Regenerative Medicine (HERM) at the Department of Medicine, Huddinge (MedH) is defending her thesis: "Cellular and personalized therapies in multiple myeloma with special emphasis on retargeted NK cells" 16 June 2023.

What is the main focus of your thesis?

My thesis centers around new treatment approaches for multiple myeloma (MM), an incurable plasma cell malignancy, diagnosed in over 160,000 people very year worldwide. Particularly, my thesis provides new insights on personalized treatments for MM. The first part focuses on genetically modified natural killer (NK) cells, a type of white blood cells with natural anti-cancer activity, and explores their potential as a targeted therapy for MM. Genetically-engineered NK cells are not approved for use in cancer treatment yet, despite their undeniable potential. The second part investigates the efficacy of the chemotherapeutic drug Venetoclax as treatment for patients with the genetic mutation t(11;14).

Which are the most important results?

The results provide new insights into the application of targeted NK cell therapy to treat MM. The thesis presents a new, feasible approach to generating NK cells directed against CD38, a commonly targeted protein in MM. In addition, we present evidence that genetically modified NK cells can have improved anti-myeloma activity by reducing the negative feedback they receive within the hostile tumor microenvironment. Both of these findings add to the current knowledge on the application of targeted NK cell therapy for MM. In the second part of the study, which is a clinical trial, we show the benefit of treating patients with t(11;14) with Venetoclax.

How can this new knowledge contribute to the improvement of people's health?

Resistance to treatments is a very common problem for patients with MM. Being refractory to multiple lines of treatment eventually limits the

patients' options. There is, therefore, an urgent need for adding new therapies to the current MM armory and cater for these patients. The new knowledge presented in my thesis supports the use of NK cell therapy as treatment in MM and investigates personalized therapy approaches.

What are your future ambitions?

Following my doctoral education, I would like to continue working towards bringing innovative treatment options for patients battling cancer. I would specifically like to work with new targeted cell therapies.

More information: Cellular and personalized therapies in multiple myeloma with special emphasis on retargeted NK cells. openarchive.ki.se/xmlui/handle/10616/48647

Provided by Karolinska Institutet

Citation: Q&A: Thesis on new treatment approaches for multiple myeloma (2023, June 9) retrieved 13 May 2024 from https://medicalxpress.com/news/2023-06-qa-thesis-treatment-approaches-multiple.html