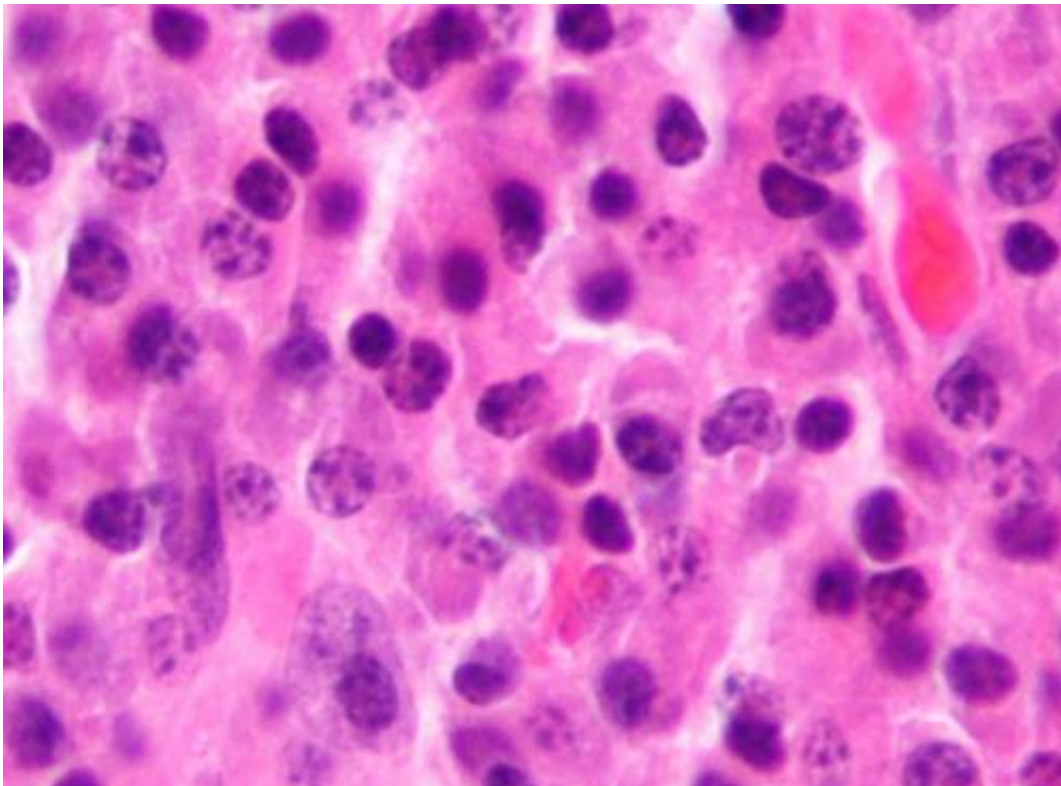


Multiple myeloma patient study shows promise for natural killer cells

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

A first-in-human Phase I study of multiple myeloma patients combined expanded cord blood-derived natural killer cells with transplantation of a patient's own stem cells and high-dose chemotherapy with little or none of the side effects seen with current treatments.

Multiple myeloma is a cancer that forms from [white blood cells](#) that are found in the bone marrow and are normally vital to a healthy immune system. Natural killer (NK) [cells](#) are white blood cells that roam through the blood stream, attacking infections and potentially cancer-causing cells. The technology to grow NK cells from [umbilical cord blood](#) was developed by Nina Shah, M.D., assistant professor and Elizabeth J. Shpall, M.D., professor in the department of Stem Cell Transplantation and Cellular Therapy at The University of Texas MD Anderson Cancer Center.

Results from the clinical study, led by Shah and Shpall, were presented today at the 57th Annual Meeting of the American Society of Hematology (ASH) annual conference in Orlando, Fla.

"Multiple myeloma is an incurable disease thought to be characterized by immune dysregulation and exhaustion, whereby proliferation of malignant plasma cells is not checked by the immune system," said Shah. "Long-term remissions in some patients after stem cell transplants from donors have been observed, but treatment-related toxicity limits the widespread use of this therapy."

Shah and Shpall's team enrolled symptomatic patients who qualified as candidates for high-dose chemotherapy drugs like melphalan, and transplantation of the patient's own stem cells.

"Successful natural killer cell expansion to target dose was achieved in all the patients," said Shah. "The cell therapy infusion resulted in no toxicity and no occurrences of graft-versus-host disease."

Graft-versus-host disease is a condition in which the patient's immune system is attacked by the donor stem cells. The disease can occur in patients who have received donor stem cells or immune.

Twelve patients were enrolled in the study and were divided into four separate groups, with each receiving different dose levels of cord blood-derived [natural killer cells](#). Ten of the 12 patients demonstrated high-risk disease or relapse in disease prior to study participation.

Provided by University of Texas M. D. Anderson Cancer Center

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