Researchers develop a new ultrasensitive method that detects residual disease in patients with multiple myeloma

This procedure could better predict the risk of relapse and improve patients' quality of life by decreasing the frequency of bone marrow aspirates

In the front row, Dr. Bruno Paiva, with the team from the Multiple Myeloma Group at Cima and the Clínica Universidad de Navarra that participated in the study.

PAMPLONA, SPAIN, June 3, 2025 /EINPresswire.com/ -- Multiple myeloma is a hematologic cancer that spreads in the bone marrow and has seen significant advances in treatment. Currently, it is estimated that the progression-free survival rate exceeds 80% at five years in patients with negative minimal residual disease, which means that more and more invasive studies are being performed to confirm this response over time. Therefore, it is crucial to develop new and sensitive methods to monitor stable versus progressive disease in less invasive samples such as peripheral blood.

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>
> *Bruno Paiva*

Researchers at the Cima Universidad de Navarra, part of the Cancer Center Clínica Universidad de Navarra, have developed a method, called BloodFlow, that detects residual disease in the blood of patients with multiple myeloma with ultra-sensitivity. "Our procedure combines immunomagnetic enrichment of plasma cells present in large volumes of blood, followed by next-generation flow cytometry to identify those that are malignant. For the first time we have managed to achieve a sensitivity that allows the detection of one tumor cell among 10 million normal cells (10-7)," Dr. Bruno Paiva, principal investigator of the Multiple Myeloma Group at Cima and head of the study, says. "This enabled the identification of patients with a higher risk of progression due to the presence of circulating tumor cells in the blood."

A new method that is already being applied in other countries.

This methodology has been applied to blood samples from more than 300 patients belonging to the Spanish Myeloma Group (GEM-PETHEMA). “Our work shows that BloodFlow significantly enhances patient’ risk stratification without the need for invasive bone marrow tests, which improves their quality of life,” Dr. Paiva, adds. The results have been published in the Blood journal.

The scientists conclude that BloodFlow is an innovative tool that significantly improves the detection of residual disease in peripheral blood (i.e., “peripheral residual disease) and offers a more accurate and dynamic assessment of disease status in patients with multiple myeloma. It therefore has great potential to optimize therapeutic approaches and improve clinical outcomes. “This method is already being tested in centers in the U.S. and Germany, and our group plans to investigate its value in other tumors such as acute myeloblastic leukemia and some lymphomas,” the Cima expert concludes.

The study, carried out within the framework of CIBER Cancer (CIBERONC CB16/12/00369), has received public funding from the Instituto de Salud Carlos III. It has also received support from private institutions such as the Riney Family Foundation, the CRIS Foundation against Cancer and Iberdrola through the Spanish Association Against Cancer (EDITOR project).

Bibliographic reference

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