Exploring clonal hematopoiesis and its impact on aging, cancer, and patient care

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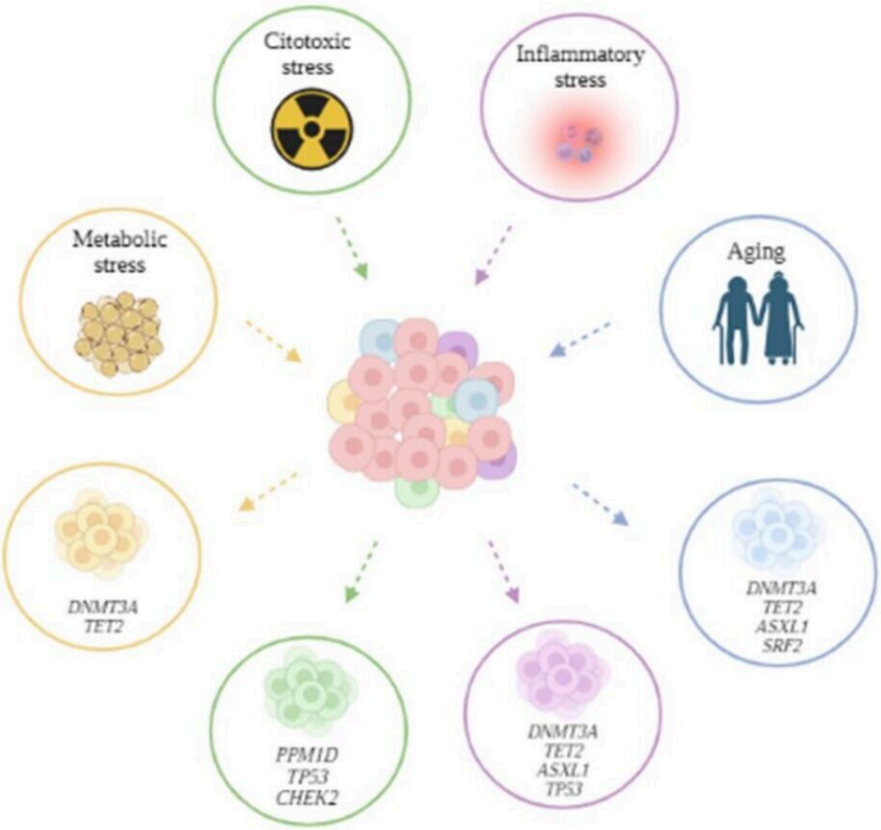

Stressors and CH clones. Credit: *Aging* (2023). DOI: 10.18632/aging.205404

A new editorial paper titled "Exploring clonal hematopoiesis and its impact on aging, cancer, and patient care" has been published in *Aging*.

In this new editorial, researchers Julieta Elena Rodriguez, Jean Baptiste Micol and Capucine Baldini from Gustave Roussy discuss clonal hematopoiesis. Clonal hematopoiesis (CH) is a term that refers to the presence in blood cells of hematologic malignancy-associated somatic mutations without fulfilling the diagnostic criteria of hematologic disease. Emerging evidence suggests that CH is a consequence of an expansion of cells harboring initiating driver mutations, potentially linked to the aging hematopoietic system.

While these detectable somatic mutations are rare in individuals under 40 years old, they become increasingly prevalent in the elderly population, a term called age-related clonal hematopoiesis (ARCH), reaching up to 18.4% in those aged 90 years or older. Aging itself is a significant stressor associated with CH, particularly in individuals over 70 years old. DNMT3A, TET2, and ASXL1 mutations are more common with advancing age.

"Recent evidence also indicates that CH may play a role in solid tumors, such as an increased risk of incident lung cancer. While initial studies associated CH mutations with worse survival outcomes, newer findings suggest that solid tumor patients with CH may experience longer survival. However, the underlying mechanisms behind this relationship remain to be elucidated," the researchers write.

More information: Julieta Elena Rodriguez et al, Exploring clonal hematopoiesis and its impact on aging, cancer, and patient care, *Aging* (2023). DOI: 10.18632/aging.205404

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