

Autologous bone marrow mononuclear cell

Autologous bone marrow mononuclear cells (BMMNCs) refer to a type of **cell therapy** where cells are harvested from a patient's bone marrow and then reintroduced into the same patient. This approach is considered **autologous**, as it involves using the patient's cells to avoid issues of immune rejection.

The bone marrow is a rich source of various types of **cells**, including hematopoietic stem cells, **monocytes**, **lymphocytes**, and other progenitor cells. When bone marrow is collected from a patient, the mononuclear cell fraction is isolated. This fraction includes cells with a single, rounded nucleus, such as lymphocytes and monocytes, as well as other stem and progenitor cells.

Autologous bone marrow mononuclear cell therapy has been investigated and used in various medical contexts, particularly in the field of regenerative medicine. It is explored as a potential treatment for conditions such as:

Bone Marrow Transplantation: In the context of certain cancers or disorders affecting the bone marrow, autologous BMMNCs may be collected and then reintroduced into the patient after high-dose chemotherapy or radiation to help restore the bone marrow function.

Cardiovascular Diseases: Some research has explored the use of autologous BMMNCs in the treatment of cardiovascular diseases, such as myocardial infarction (heart attack). The cells may be injected into the damaged heart tissue to promote tissue repair and regeneration.

Orthopedic Conditions: Autologous BMMNCs have been investigated for their potential to promote the healing of bone and cartilage in orthopedic conditions.

It's important to note that while autologous cell therapies have advantages in terms of avoiding immune rejection issues, their efficacy and safety are areas of ongoing research, and the use of such therapies is typically subject to rigorous clinical trials and regulatory scrutiny.

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