

Editorial

A Stem Cell-rescue Operation in a Nuclear Devastation

Dear Friends

The aftermath of one of the most devastating post earthquake- tsunamis in the history of mankind, the March 2011 post-earthquake-tsunami-hit nuclear accident in Fukushima, Japan, has brought to fore several questions throughout the world on the safety of nuclear installations. Such Calamities, which are far beyond our comprehension, has left all nations with such installations and those planning to expand their nuclear power plant programmes in a dilemma.

However, the recent news that the Japanese authorities are considering to harvest and store bone marrow stem cells for transfusion to radiation-exposed workers has ushered in a new ray of hope. The hematopoietic stem cells will be harvested before exposure and in case of bone marrow depletion after radiation exposure; these cells can be immediately retrieved from storage and transfused to the radiation-exposed worker so that they have the potential to re-constitute the entire bone marrow in the patient. This will be a great life-saver and game-changer as bone marrow depletion is one of the major consequences of high levels of radiation exposure.

This strategy can be prescribed as a routine procedure in all the countries with such nuclear installations, especially for workers at very high risk of radiation exposure. In future, such preventive strategies should be considered for implementation to not only the workers in the facility, but also the rescue team and the vulnerable population in the radiation zone.

The regenerative potential of hematopoietic stem cell (HSC) is the key factor to be considered now. This is high time that the studies on optimal *in-vitro* expansion of HSCs and ways of successful engraftment of the transfused cells to a niche of radiation-exposed host environment should be attempted in all earnestness by the regenerative medicine community at present.

Natural calamities like this help man to realise that the millions of scientific discoveries and inventions can never match 'the nature of NATURE'. Such calamities, however, help us to re- position ourselves and demonstrate our immense capacity of resilience. Mankind will never perish as long as the "Strong will to survive" remains intact and the Science of Regenerative medicine teaches man the mortal, that anything can be repaired, restored or rejuvenated as long as the fountain of ideas, work and knowledge combined with hope and visions, remains immortal.

"To suffer woes which Hope thinks infinite;
To forgive wrongs darker than Death or Night;
To defy Power, which seems Omnipotent;
To love, and bear; to hope, till Hope creates
From its own wreck the thing it contemplates;
Neither to change nor falter nor repent;
This, like thy glory, Titan! is to be
Good, great and joyous, beautiful and free;
This is alone Life, Joy, Empire and Victory."

PERCY SHELLEY

From: Prometheus Unbound

Happy Reading!