Introduction

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Stem Cell Therapy: The New Era...

Although stem cell research is on the cutting edge of biological science today, it is still in its infancy ***(Falciatori et al., 2004)***.

Experiments in animals are necessary, but not sufficient, studies with human stem cells are essential to make progress in the development of treatment for human diseases ***(Catherine et al., 2002)***.

There are important biological differences between adult and embryonic stem cells and among adult stem cells found in different types of tissues. The implications of these biological differences for therapeutic uses are not yet clear, and additional data are needed on all stem cell types. The application of stem cell research to therapies for human diseases will require much more knowledge about the biological properties of all types of stem cells ***(Bianco et al., 2001)***.

Adults stem cells from bone marrow have so far provided most of the examples of successful therapies for replacement of diseased or destroyed cells. Many years ago, haematopoietic stem cells (HSCT) transplantation considered a clinically acceptable treatment for many diseases ***(Hoffbrand et al., 2005)***, and in our study we will focus on sources, indications, technique and complications of HSCT.

Studies of human embryonic stem cells have shown that can develop into multiple tissue types and exhibit long-term self-renewal in culture, features that have not yet been demonstrated with many adult stem cells ***(Tzukerman et al., 2003)***.