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Stem cell therapy: The Phoenix in clinical medicine ?

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The Phoenix is a mythical bird with brightly colored plumage known in ancient Greek for the legend of its rebirth. After a long life, the Phoenix dies in a fire of its own making and then rises again reborn from the ashes. This myth parallels current feverish beliefs concerning the ability of stem cell therapy to regenerate tissues in diseased organs. Investigation into stem cell therapy has become one of the most intriguing areas of basic science and clinical research during the last decade. The concept of stem cell based tissue regeneration has raised ample hopes in the eyes of healthcare practitioners and patients seeking repair of injuries to a variety of organs damaged by serious illnesses, which, in the recent past, were considered "incurable" or "irreversible". The hope has been that such regenerative therapy would reduce associated morbidity and mortality rates. The news media and the general public have already taken an enthusiastic attitude towards this new and exciting concept of clinical therapeutics. In 2010, the US Department of Health and Human Services published an optimistic report entitled "2020: A New Vision—A Future for Regenerative Medicine"¹. However, despite this enthusiasm, a number of clinical studies have reported inconsistent findings at this point, warning of a long road before these therapies can become part of daily clinical practice²⁻⁶.

Recently, the New England Journal of Medicine published two articles involving stem cell therapy for five patients with macular degeneration. In both

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