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ESC research cannot be ignored

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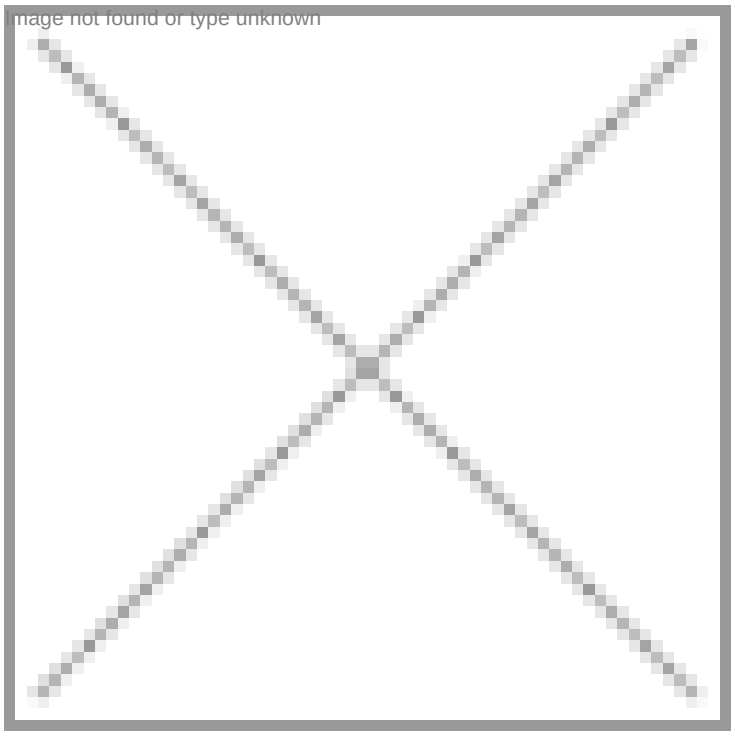

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India is grappling with setting a clear guideline for the emerging area of stem cell research. Recently, the Indian Council of Medical Research (ICMR) and the Department of Biotechnology (DBT) even organized a public consultation to take the process further. These guidelines were last prepared in 2007 and a number of ethical issues continue to plague, given the nature of research and the high potential of misuse. In fact, research on human subjects itself is in throes of regulation. The Biomedical Research Human Subjects Promotion and Regulation Bill that is in the making, will also address the issue of embryonic stem cell (ESC) research. There is an expectation that discarded embryos from the fertility (IVF) clinics will be directed towards this end, through an acceptable process. The promise of embryonic stem cells is too huge to be ignored.

However, California-headquartered Geron Corporation, a pioneer in the embryonic stem cell research recently exited the business to focus on other lucrative projects. What forced the company to take this step was business interest, so to speak. But that does not quite answer many questions, given that this step was taken just a few months after California Institute for Regenerative Medicine gave a loan of $25 million to Geron to support the first human trial of stem cell-based spinal cord therapy. There are not many companies working on embryonic stem cell research that have come close to any therapy.

The scientific community was looking up to Geron and the decision led to shock and disappointment, especially for those who are working on the stem cells, embryonic or otherwise.

In this background, Geron's exit does speak about the future of embryonic stem cell research, the world over. It is faced not just with ethical and funding challenges but also the limitation of not enough research on the basic science of embryonic stem cells. There are too many gaps in the basic science of embryonic stem cell to move it into therapy yet. It will be a long while for any results to show there. So, all breakthroughs should be celebrated minus the hype.

A decade has passed since the embryonic stem cell research kicked up a storm on ethics in 2001 peaking in 2004 when Korea's Hwang Woo-Suk took the global scientific community for a ride, claiming breakthrough that involved cloning human embryo and producing stem cells lines. Government research resources, even in the US, were not supporting embryonic stem cell research until the Obama administration lifted the ban in 2009. Meanwhile, the breakthrough discovery of induced pluripotent stem cells (iPS) from skin happened and that moved the stem cell research into another direction, an uncontroversial one at that. A lot of work is happening on the iPS cells harvested from skin, bone marrow or dental pulp among others. None of that is said to be even in the striking distance of any therapy. But the discoveries are moving ahead the scientific understanding of stem cells, which will be the foundation of therapies to come. Stem cell therapy is an emerging area. In due course, it will live up to its promise.

Given the background, a clear policy direction will help Indian researchers get closer to regenerative therapies, in line with countries like Australia, a forerunner in the segment. Meanwhile, cord blood ands stem cell banking is a thriving business proposition in India.