



The Guardian Wednesday January 24 2001

Scientists predict stem cell trials by 2004

Tim Radford
Science editor

The first human trials of embryo stem cells as a treatment for Parkinson's disease could take place within three to five years, experts said yesterday.

A vote in the House of Lords on Monday night cleared the last political hurdle to a change in the rules governing research on human embryos.

For the past 10 years, the only use permitted has been for infertility treatment and research. Now, against hotly

argued opposition, and two years of examination by a procession of committees, both Commons and Lords have approved the use of embryos up to 14 days old for research into treatments for a wide range of diseases.

Stem cells are the natural source of all human tissue; a transplant of stem cells could, in theory, repair liver damage, or heart muscle, or spinal cord injury. Embryo stem cells can develop into any, or all of the 200 specialist cells in the human body. But the first tar-

gets are likely to be the slow, neurodegenerative diseases.

Research could begin with the collection and preservation of stem cells from up to 1,000 existing embryos, all of which must be destroyed if not used for fertility treatment.

These 1,000 dishes of frozen cells would, said Richard Gardner of Oxford University, cover the range needed for safe transplantation. The hope is that injected stem cells of the correct type would migrate to the damaged organs and at least relieve symptoms.

"You would have them there in anticipation of patient needs," he said. "You wouldn't have the harrowing situation that exists at the moment of a patient having to wait for someone else to die before they have any prospect of a transplant."

Simon Best, of the Bioindustry Association, said that the first applications for experimental licences would be from researchers already focused on human need.

"Obviously, Parkinson's is a very good case. My prediction would be: the first human

trials in perhaps three years," he said. "If things go very well, you may see the first small-scale commercial application seven years from now."

Links

www.doh.gov.uk/cegc/stemcellreport.htm Department of Health report on stem cell cloning
www.tasc.ac.uk/cc/briefing/0012/0001204.htm Catholic bishops' conference statement on cloning
www.cofa.anglican.org/view/embryo.html Church of England statement on cloning

Austin Smith of Edinburgh University's centre for genome research said yesterday that the Lords verdict was "a decision of vision and hope" and that scientists needed to develop their knowledge and techniques as rapidly as possible.

"Our initial target will be to generate nerve cells that might be used to treat neurodegenerative conditions such as Parkinson's or Huntington's diseases. We are only at the beginning of this research, however, and I think it will be at least five years and probably

somewhat longer before the first cell transplantations into humans."

Other diseases in the researchers' sights include diabetes, muscular dystrophy, multiple sclerosis, stroke and spinal cord injury.

Although much of the debate centred on so-called "therapeutic cloning", the creation of embryos from cells fertilised by transferred DNA, this is not likely to happen in the near future. "In practical terms it isn't a realistic thing for helping patients on a large

scale," said Professor Gardner.

Nor is there likely to be a stampede for permission to start on research with embryos. "You have got to be highly motivated to want to do that work. The bureaucracy involved in any human embryo work, like animal work, is very dramatic," he said. "It deters all but the most committed."

Jeremy Hardy, page 7
Special report on the ethics of genetic research at www.guardianunlimited.co.uk/genes