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Stem cell hope for Parkinson's



By Jonathan Amos in San Francisco

Scientists are closer to finding a cure for Parkinson's disease using special "master cells" taken from embryos.

Dr Ole Isacson, of Harvard Medical School, and Dr Ronald McKay, of the US National Institutes of Health, said on Friday they had both used the cells successfully to treat mice and rats which mimicked symptoms of the human condition.

But the researchers, who revealed details of their work at the annual meeting of the American Association for the Advancement of Science, may find that political and ethical obstacles will delay the treatment getting into clinical trials.

Public funding for research that uses cells taken from embryos is restricted in the US, as it is in many countries. Although the new Bush administration has promised to review the ethical issues involved, it has yet to come forward with a policy position.

Until it does, the scientists say it could be difficult to develop further some of the emerging cell technologies.

Adequate supplies

Isacson and McKay used slightly different techniques but achieved broadly similar results. Both used embryonic stem cells, the master cells that can transform into virtually any tissue type in the body, and which can be grown in vast numbers.

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The scientists used the cells so that they would produce dopamine when implanted into the brains of rats and mice. Dopamine is the key brain chemical missing in Parkinson's patients, and which gives rise to the classic symptoms of tremor and rigidity.

Drug treatment for Parkinson's has only short-lived beneficial effects, and researchers have had difficulty obtaining sufficient supplies of dopamine-producing cells from foetal tissue for use in brain transplants.

"What stem cell research provides is finally to get an adequate source of cells that one can produce in tubes that the neurosurgeons can implant," Dr Isacson said. "This would be a revolution."

'Medical moonshot'

But if scientists are to take the research further, they will need support from politicians. Ethical concerns about the use of embryos mean public researchers can only use stem cells if they are sourced from private labs.

Jeffrey Martin, a Parkinson's sufferer and campaigner, told the AAAS meeting that he was hopeful the new US Government would be a supporter of biomedical technology and extend the scope of funding.

"If the public is made aware of the opportunities here then the president will in fact do what he said in his campaign in Florida in September and launch what he called a medical moonshot to cure a number of age-old diseases with new resources and new resolve."

Dr McKay said it was possible the new Parkinson's treatments would be developed in a country where the regulatory framework covering stem cell research was most benign.

"Recently the British Government has moved forward in this area," he said. "There has also been very positive moves from the French and Dutch Governments in the use of stem cells as a clinical treatment."

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