

Ask the Experts on . . .

Stem Cell Transplantation for Parkinson's Disease

Question

What is the current status of transplantation or implantation of neural or fetal tissue or stem cells in the treatment of Parkinson's disease? What are the leading centers for such research and treatment?

Response from William Koller, MD, 04/20/00

The NIH has funded 2 studies of neurotransplantation in Parkinson's disease (PD), one at Columbia University/University of Colorado (completed) and the other at Mt. Sinai in New York (near completion). In addition, a group in Tampa, Florida, and another in Sweden have been reporting individual cases. All these studies have used aborted human embryonic tissue. The preliminary findings indicate that:

- Clinical benefit does occur; however, the benefit is not marked and there is a delay of many months before the clinical change.
- Postmortem examinations show that tissue grafts do survive and innervate the striatum.
- PET scans show that there is an increase in dopamine uptake after transplantation.
- Follow-up studies show that long-term benefit does occur with transplantation.

Investigators from the Columbia-Colorado study presented their findings at the 1999 annual meeting of the AAN in Toronto, Ontario, Canada. They reported that the clinical benefit of neurotransplantation in patients with PD was modest and only occurred in patients younger than 50 years, that PET scans showed an increase in dopamine uptake in all patients, and that some patients who were taken off all drugs experienced dyskinesias (runaway dyskinesias) as a side effect.

Thus, we can draw several conclusions about neurotransplantation for PD:

- The procedure is still investigational and not available for widespread use.
- The technique needs to be optimized to provide more clinical benefit.
- The procedure may carry adverse effects such as dyskinesias.
- Nonetheless, this approach may hold promise for the treatment of PD.