How should imaging be used in Parkinson disease?

Ravina et al. describe how PET and SPECT imaging methods have been used as biomarkers in PD. The authors conclude that there are insufficient data to support the routine use of these imaging techniques as diagnostic tools or surrogate markers and suggest changes in the design and execution of future imaging studies.

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Duodenal levodopa infusion vs oral polypharmacy in PD

In a randomized crossover trial in 24 patients with advanced Parkinson disease (PD), Nyholm et al. compared intraduodenal infusion of a levodopa/carbidopa gel with individualized conventional combination treatments. Infusion decreased "off" state, and increased "on" state without increasing dyskinesias; it also improved quality of life.

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The accompanying editorial by M. Maral Mouradian notes that the search goes on for ways to stimulate striatal dopamine receptors pharmacologically in a sustained manner with a method that can be handled by parkinsonian patients and their caregivers. The Nyholm et al. study used a gel formulation that reduces the volume of infusion 10-fold, allowing it to be delivered with a portable pump, and eliminates the need for carbidopa. There were limitations to this study: it was not double-blinded or placebo-controlled and the patients used rescue medications as needed. Nonetheless, effective duodenal infusion may be an alternative for parkinsonian patients who cannot tolerate or handle subcutaneous apomorphine infusions or who are poor candidates for deep brain stimulation.

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Decreased atrophy rate with IFNβ-1a

In a study including 386 patients followed for 3 years, Hardmeier et al. showed that from 4 months onward, the rate of brain atrophy was lower than in the first 4 months of treatment with IFNβ-1a and in the pretreatment period. Early in the treatment period, atrophy measurements may be confounded by resolution of inflammatory edema or more remote effects of previous parenchymal damage. These results provide more evidence for sustained, but partial, effectiveness of IFNβ-1a in limiting CNS tissue loss.

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Periventricular heterotopia and Ehlers-Danlos syndrome

MRI of an individual with the Ehlers-Danlos variant of periventricular heterotopia. Bilateral gray matter nodules, lining the ventricles in frontal cortex (white arrowheads).

Mutations in the actin-binding protein filamin A cause an X-linked form of periventricular heterotopia. Sheen et al. now report that disruption of this gene in individuals with periventricular heterotopia is associated with an Ehlers-Danlos syndrome phenotype: joint hypermobility, hyperextensible skin, and aortic aneurysms.

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Blood pressure and hippocampal atrophy on MRI

den Heijer et al. found that blood pressure levels were associated with hippocampal and amygdalar atrophy in 511 nondemented elderly: both higher diastolic pressure in untreated hypertension and low diastolic pressure in treated hypertension were associated with atrophy. Thus, vascular factors may contribute to the atrophy of structures affected by Alzheimer pathology.

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Vascular risk factors and dementia

Whitmer et al. examined diabetes, high cholesterol, smoking, and hypertension in 8,845 middle-aged participants and found that the presence of multiple cardiovascular risk factors at mid-life substantially increased risk of late-life dementia in a dose dependent manner: from 1.27 for one risk factor to 2.37 for all four.

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Effect of corticosteroids on memory functions

Brunner et al. studied patients receiving steroid therapy for multiple sclerosis or optic neuritis and demonstrated a selective, reversible impairment of long-term memory.

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The accompanying editorial by Roozendaal and de Quervain notes that these findings are similar to those of basic and preclinical research examining the physiological effects of acute stress and stress hormones on memory. Emotionally arousing events, which induce the release of endogenous stress hormones, are usually well remembered; emotionally neutral experiences are less well remembered. However, it is not known whether the cognitive impairment induced by longer treatment periods with high doses of glucocorticoids are also attributable solely to influences on memory retrieval, and thus fully reversible, or whether in those conditions some irreversible neurologic damage may occur.

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Treatment of musician's dystonia

Schuele et al. review their use of botulinum toxin injections for musicians with focal task-specific dystonia (FTSD). One third of patients had sustained benefit in performance ability for up to 7 years.

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The accompanying editorial by Pullman and Hristova notes that musicians are prone to FTSD due to their intense training and years of performing complex repetitive movements. While FTSD occurs in 1:3,400 in the general population it is 1:200 among musicians. They present perspective from celebrated pianist, Leon Fleischer, who was forced to radically alter his performing career. FTSD may be caused by plastic reorganization of the cortex that may lead to better performance, but may set the stage for dystonia. They further emphasize the heterogeneity of the Schuele et al. study population: a large number of musicians and a wide variety of instruments. This study leaves open questions about the typical dystonia muscle patterns and botulinum toxin type A doses for each type of instrument and FTSD but overall presents a nice overview of current therapy for musician's dystonia.

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Intracranial meningioma and ionizing radiation

The Phillips et al. population-based case-control study (200 cases and 400 controls) did not identify an association of meningioma with diagnostic studies or occupational exposure. Radiation therapy to the head or neck was associated with meningioma.

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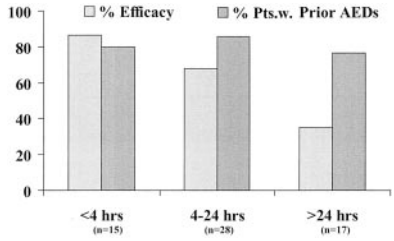
Valproate: An emerging option for status epilepticus



Efficacy based on time of treatment.

Limdi et al. studied the use of valproate in patients with status epilepticus refractory to conventional therapy. Over 60% of patients responded and rapid IV administration proved to be well tolerated.

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