

Profile

Joseph Jankovic: Mozart and movement disorders



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Joseph Jankovic is a man of many passions, the chief of which is a keen interest in movement disorders. Over the course of a career spanning more than 30 years, he undertook the first randomised, double-blind clinical trial showing the efficacy of botulinum toxin in the treatment of cranial cervical dystonia. He was the first to recognise the postural instability and gait difficulty subtype of Parkinson's disease; and he shepherded tetrabenazine through the arduous approval process required by the US Food and Drug Administration, a quest that began in 1979 and finally ended in success in October, 2008. By Jankovic's own estimation, he has seen at least 20 000 patients, and he and his associates have tested almost all of the currently approved medications for Parkinson's disease. "He is the most productive and prominent clinical researcher in the field of movement disorders—if it has anything to do with a movement disorder, Dr Jankovic has been involved with it", says William Ondo, who served as a fellow under Jankovic in 1995 at the Baylor College of Medicine, TX, USA, and ultimately became an associate professor of neurology there. "The breadth of his research is phenomenal."

This career was something of a departure for the young man born near Prague, Czech Republic, who arrived in the USA at the age of 17 with hopes of becoming a pianist. He originally landed in California, USA, where he was "adopted" by distant relatives so he could remain in the country. After changing his focus from music to medicine, he attended college and medical school at Arizona State University, AZ, USA. He then went to Houston, TX, USA, where he completed his internship at Baylor in 1974. Jankovic did his residency and ultimately became chief resident at the Neurological Institute at Columbia University in New York City, NY, USA. While at Columbia he began his in-depth study of movement disorders under the auspices of Stanley Fahn, another pioneer in the field. In 1977, after completing his training at Columbia, he returned to Baylor, where he established the Parkinson Disease Center and Movement Disorders Clinic (PDCMDC).

"What attracted me to neurology was the power of observation. I enjoyed examining the patients", Jankovic recalls. "Movement disorders will always remain a discipline in which examination and observation are critical. And I am fascinated by the clinical differences between the movement disorders." Indeed, one of Jankovic's main contributions to the field is his "huge experience in seeing patients with movement disorders and classifying them into clinical groups. This has aided diagnosis and facilitated clinical care", says Mark Hallett, chief of the Human Motor Control Section at the US National Institute of Neurological Disorders and Stroke.

In Jankovic's view, the lack of good biomarkers and neuroprotective therapies for Parkinson's disease are among

the greatest current challenges in movement disorders research. Together, tackling these challenges would enable clinicians to identify patients before they are symptomatic and begin treatment as early as possible to slow disease progression, if not prevent it entirely—"the Holy Grail of Parkinson's disease research", he says. "Currently, there is no test for Parkinson's disease; it is diagnosed on clinical observation." Genetic tests are available, but only about 10% of patients have a known genetic abnormality. His team at the PDCMDC has found genes that encode transcription factors of the dopaminergic system, a discovery that prompted them to propose a new theory of Parkinson's disease development: "we think that some people may have fewer [dopaminergic] transcription factors at birth". The team is also experimenting with neuroprotective agents, most notably rasagiline, a monoamine oxidase inhibitor that prolongs the action of levodopa by inhibiting its breakdown.

While being immersed in neurology, Jankovic has never lost his passion for music. Each year he teaches a popular course on the comprehensive diagnosis and treatment of movement disorders in musicians at the Aspen Institute in Colorado, USA. With his student Aidan Ashoori, Jankovic has published papers suggesting that Mozart, among other creative geniuses, might have had Tourette's syndrome, citing as evidence the composer's possible comorbidities such as obsessive-compulsive or bipolar disorder and fondness for scatological jokes and phrases. "Disinhibition is an absolute requirement for creativity", he explains. "Many of my patients with Tourette's syndrome are highly creative and interested in the arts. People often ask why we no longer have any Mozarts or Beethovens. My theory is that maybe the geniuses of today are treated [for their bipolar or obsessive-compulsive disorder], which may blunt their creativity."

Jankovic is quick to credit Fahn and Lewis P Rowland, another prominent neurologist at Columbia, as his most important mentors, saying they played a crucial part in his development as a neurologist and a specialist in movement disorders. He takes particular pride in having had a similar role in the careers of many outstanding fellows and young physicians. He also acknowledges his debt to his three sons and his wife, Cathy: "I could never have accomplished what I have without her."

Today, Jankovic names tennis and chocolate as two more passions. He still plays the piano occasionally, "but only when no one is listening". "My mother wanted me to be a pianist", he adds. "I guess I disappointed her." One suspects that she would disagree with that assessment.

Norra MacReady
medrite@aol.com

For more on **Mozart's movements and behaviour** see *J Neurol Neurosurg Psychiatry* 2007; **78**: 1171–75