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Case Report Open Access

Brief but Relieving Treatment for a Nonagenarian

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Case Report

Nettie, child of first generation Eastern European immigrants, was raised in the lower east side of Manhattan in an era of survival. The family frequently moved in advance of the rent collector. She understood the value of money. Frivolous expenditures were not respected. As an adult she was not deprived. She dressed meticulously and transformed modest clothing into an attractive outfit. She was widowed over forty years ago. After her husband's demise, through well-selected money management, she converted debt and a humble survivor's benefit into several hundred thousand dollars. The death of her youngest child 8 years ago caused sadness that she rarely revealed; publically, she always appeared composed, tactfully dressed, and quiet with a subtle smile.

In her 70's many long-term friends moved to a warmer climate and eventually the bonds were lost. In her 80's the remaining long-term friends were either demented or dead. She lived in a lovely apartment community of people mostly over 70 years old. The community provided movies, indoor aquatics, and aerobics. She enjoyed organized self-paid trips to cultural events especially live theatre and opera. Into her early nineties, she remained an avid reader.

Her health remained excellent. Hypertension was diagnosed in her mid 80's. At age 90 she tripped and fell during a line dancing class. Relatives recalled the charmed ED nursing staff. Nettie arrived dressed in a pink top, white pants and wearing her dancing shoes. She underwent pinning of her hip, and six weeks later returned to line dancing.

Nettie suffered insomnia for many years. When she informed this author about the insomnia, she revealed an unguarded affect of misery. Insomnia was characterized as repetitive middle night awakenings. She did not nap during the day. When she informed this author about chronic insomnia, she revealed an unguarded affect of misery. Review of family history revealed several living relatives diagnosed and treated at some point in their life for unipolar depression. Nettie never requested treatment for her misery and insomnia. This history suggests a differential diagnosis of a chronic "subclinical" or overt but untreated depression.

In her mid-nineties, she showed initially subtle but progressive impairment of recent memory and concentration. She was a lifelong avid reader; this interest was lost. She complained of abdominal pains especially in the morning. She had a large asymptomatic hepatic cyst for many years. In hopes of relieving her abdominal pain, under CT guidance the cyst was drained of 1.5 litres of fluid. She expressed immediate relief of discomfort. Slowly abdominal pains returned and 6 months later 700 ml of fluid was removed from the cyst but without relief of abdominal pains that were increasingly frequent. Invasive surgery was determined too much of a risk.

Nettie lost appetite, weight and lost social interests; she chose to be alone. Due to increasing general weakness causing physical instability she required hospitalization. Her deteriorated body requiring a four-wheel walker for ambulatory assistance caused shame and embarrassment. She wanted to die. She tired of living. All of her friends were dead; she acknowledged cognitive losses. She evinced bradyphrenia, intermittent confusion and disorientation to time and place. She refused medicine. CT of brain showed age appropriate cerebral atrophy. She developed anemia perhaps due to nutritional deficiencies.

This patient suffered severe depression and emerging neurodegenerative dementia. Family allowed treatment with selegiline transdermal system (STS) 6 mg. patch daily. Within two weeks of treatment with STS, Nettie wanted physical therapy; she liked the therapist. She greeted her visiting adult grandchildren. With the aid of a previously perceived humiliating four-wheel walker, she negotiated the common long hall of her living complex. She applied make up and wanted to go out for dinner.

Although STS improved her mood and she felt less confused, she preferred death because she lacked the ability to manage her affairs or hygiene. She did not feel productive and alive. She agonizingly stated that she could not recognize herself in the mirror.

Nettie's mood was bright enough to allow her daughter to humorously tease about a few single octogenarian males who attempted to gain her attention. Nettie laughed. I informed her that there would be no sexual dysfunction associated with selegiline. She laughed and responded, "Thanks, but I don't think I'm interested."

Relief from despair occurred in the last 8 months of her life. After about 3 months of relieving selegiline treatment, she stopped using the STS patches. When asked why she stopped, she explained that she felt improved. Her remark may be valid in view of a history of never taking medicine, even antibiotics, unless mandatory, the antihypertensive. This author suspects the possibility that consciously or unconsciously she perceived improvement as an obstacle to her "quietus make". Nettie quickly deteriorated in cognition, and self-care. She fell and sustained a head injury. Five days after her fall, she died peacefully in a hospice that provided Nettie and family compassionate solace. The last remark Nettie made to this author expressed her gratitude that her daughter was always there to provide affection and support. Nettie had feared abandonment.

Discussion

Under the influence of neurological deterioration, unconscious emotional defences fade permitting sequestered fears and ignored or suppressed emotions to surface. With aging, the intracellular density of superoxide dismutase (SOD), a defense against reactive oxidative species (ROS), diminishes; however, monoamine oxidase (MAO) isoenzyme B increases in density [1,2], thereby increasing ROS provoking intracellular proteins to detach from the intracellular membrane in synaptic areas and coalesce to create pathological inclusions such as neurofilament amyloid precursor protein, intracellular amyloid-beta tau, or α-synuclein proteins [2,3]. Selegiline is both an MAO inhibitor

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[4-7]and a dopamine reuptake inhibitor [6]. Active metabolites of selegiline include L-amphetamine, L-desmethylselegiline(ie, N-propargylamphetamine), and L-methamphetamine [4,6]. The extent of the clinical effects of these metabolites is controversial [4]. STS 6 mg patch is a selective MAO isoenzyme B inhibitor (MAOI-B); thus there is no dietary restriction [4,6].

Conclusion

Treatment with a selective MAOI-B drug may be part of an algorithm to treat patients like Nettie presenting both neurodegenerative and depressive disorders [8]. Transdermal administration avoids GI absorption and first pass metabolism. Nettie obtained brief relief from suffering severe despair. Perhaps there are other Nettie's who may benefit from this case report.

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