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Letter to the Editor

Relationship between Parkinson Disease and Nocardial Infections

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Dear Editor,

The genus *Nocardia* is Gram-positive, non-motile and partially acid-fast bacteria .This bacteria are caused infection in both immunocompromised and immunocompetent individuals [1-3]. Hoped that his monograph entitled An Essay on the Shaking Palsy, in which he detailed six patients with "involuntary tremulous motion with lessened muscular power, in parts not in action even when supported, with a propensity to bend the trunk forward and to pass from a walking to a running pace", would persuade neurologists that he had described an unrecognized disorder [4,5]. Jean Martin Charcot proposed that the syndrome should be called Parkinson's disease (PD). PD is regarded as a sporadic disorder but few environmental causes or triggers have so far been recognized [6-8]. In PD, ageing is the major risk factor, although 10% of people with the disease are younger than 45 years of age. The incidence of PD seems to decrease in the ninth decade of life [7] which could be art factual or related to under diagnoses of elderly people of that age, or could be a real decline. Risk of PD is more than other people [9,10] and this risk in men and postmenopausal women who are not taking hormone replacement increased [11,12]. The cause of this difference be related to dopamine's role in reward pathways and to low premorbid novelty seeking personality traits [13] rather than to any euro protective effect of tobacco smoke, nicotine or caffeine [13,14]. Althought some studies have shown the inverse association between risk to develop the disease and smoking [15]. In the brains of smokers oxidative stress can increase because of both nicotine and caffeine increase striatal dopamine release and the enzyme monoamine oxidase [16]. In literature were reported that infectious agents have a role as a risk factor for Parkinson's disease for example *Helicobacter Pylori* and *Nocardia* spp. [17]. *Nocardia asteroides* reported by Eppinger of brain abscess in 1891 [18]. In a study was reported that *Nocardia asteroides* is cause syndrome similar to PD in mice. The number of literature, *Nocardia asteroides* is one of the risk factors in PD [19]. Tam *et al.* reported that *Nocardia asteroides* GUH-2 destroys substantial nigra neurons [17]. Yassin and colleagues was first described (type VI drug pattern) in 2001 and found in the soil. *Nocardia cyriacigeorgica* may inhibit the Ubiquitin/proteasome system with produces a pigment [20,21]. Some organisms, such as *Streptomyces,* especially *Streptomyces Venezuela*, district protein degradation with produce material inhibitors [22]. In PD region-specific selective degenerate dopaminergic, neuromelanin-containing neurons from the pars compact of the substantia nigra. Cell loss in the locus coeruleus, dorsal nuclei of the vagus, raphe nuclei, nucleus basalis of Meynert and some other catecholaminergic brain stem structures including the ventro tegmental area also exists is happened [23]. In the Lewy body, the pale body and the Lewy neurite decrease nerve cells. Lewy bodies are subdivided into classical (brain stem) and cortical types on the basis of their morphology. The anatomy of brain-stem shape is a spherical structure with a hyaline core surrounded by a peripheral pale-staining halo and is composed histologically of 7–20-nm wide filaments with dense granular material and vesicular structures. Pale bodies are displacing neuromelanin and are the predecessor of the Lewy body [24]. Lewy bodies and irrespective of disease duration are part of constant proportion of nigral neurons. Lewy bodies also are continuously forming and disappearing in the diseased substantia nigra [25]. An abnormal, post-translationally modified and aggregated form of the pre-synaptic protein α-synuclein is the main component of Lewy bodies. The standard and most sensitive immuno-histochemical method for routine diagnostic purposes is α-synuclein antibodies stain Lewy bodies and Lewy neuritis. Reported that, the incidence of the disease rises steeply with age, from 17.4 in 100 000 person years between 50 and 59 years of age to 93.1 in 100 000 person years' between 70 and 79 years with a lifetime risk of developing the disease of 1.5% [26,27]. In future, more studies are very necessary about confirm role of nocardiosis in Parkinson disease because it's a question for researcher.

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