
GUEST EDITORIAL

Understanding Parkinson's Disease

Maroo H., Reeve M., Kambua D., Achei B., Ongeri J., Onyango E., Alex K., Kipchirchir K., Hakeem K., Oyuer L., Muthini P. and Kraft T.K.

The World Parkinson's Disease Day (WPDD) each year is celebrated on 11th April (the birthday of Dr James Parkinson) to raise the awareness of Parkinson's Disease (PD) which was not understood for many centuries.

Parkinson's Disease (PD) is a progressive neuro-degenerative disease, the second most common disorder of this type after Alzheimer's disease (National Institute of Environmental Health Sciences, 2017). It is speculated that PD is caused by a combination of environmental and genetic factors and perhaps the gut. This disease is a mystery for many around the world and is often misunderstood. Even the affected persons are misunderstood and unable to get the correct diagnosis, medical attention, family, carer and community support. Presently what is known is that PD is progressive in nature and can strike anyone with advancing age. As such early diagnosis is important as there are treatment options and help should be sought from neurologists.

The first step should be to seek attention from a neurologist, even though they are scarce in many developing countries including Kenya. Secondly, one is not alone since information and help is around the corner. In this digital world there are also smartphone apps for various assistance programs. Thirdly, we now have voluntary patient groups like the Parkinson's Support Group (PSG) for patients /carers /family members and also the Africa Parkinson's Disease Foundation (APDF), both based in Nairobi. Many patients benefit from the regular meetings / activities of these organisations.

The 2017 WPDD was celebrated in Nairobi, by the PSG and APDF with over 100 people participating in the medical talks and rehabilitation activities. The activities showcased daily physical exercises (important for muscle strength, reducing rigidity), breathing, sound and yoga exercises, general tips of taking care for the patient and carers, and demonstrations of mechanical aids like non-slip tiles for shower rooms and friendly door handle opening aids. Attendees included many PD patients together with their families and care-givers. Also present were health professionals like doctors, pharmacists, pharmacy /medical students and an occupational therapist, a physiotherapist, a speech therapist and a nutritionist.

The Journey of Parkinson's disease

This year's WPDD was special as it marked the 200th year since Dr James Parkinson, a British physician (1755-1828) published in 1817 his celebrated medical monograph called "*An Essay on the Shaking Palsy*" by Sherwood, Neely

and Jones (London). It was written in his own style of English of that era. Interestingly Dr. Parkinson, whilst observing people on the streets of London, noticed that some people suffered from a tremor that, along with muscle weakness, worsened with time. The Latin name for this condition was "*paralysis agitans*" or the "*shaking palsy*".

PD is a condition that has been with mankind from ancient times, though not given a clear identity as a disease. It can be traced in ancient medical manuscripts including the Indian Ayurveda and Chinese Traditional Medicine texts and a 1200 BC Egyptian papyrus. All describe the disease as bearing characteristics like resting tremor, movement rigidity and muscle atrophy.

The Indian Ayurveda refers to the condition as *kampavata*. As early as 250 BC, the Ayurveda has writings of a medical doctor in India called Charaka, one of the principal contributors of the Ayurveda, describing a condition characteristic of tremor, rigidity and bradykinesia, a picture coherent with Parkinsonism. An extract from *Atmagupta (mucuna pruriens)*, later shown to contain levodopa, was used to manage these symptoms.

Equally, ancient Chinese medical literature like the '*Yellow Emperor's Internal Classic*' has mention of a condition that mirrors Parkinsonism. A section of it describes symptoms of tremor, postural disturbances and stiffness resulting from "wind." The word 'wind' is described by the author as referring to symptoms of shaking and dizziness due to some dysfunction of the liver. This document, also known as the "Su wen" oldest Chinese medical text around 500 BC, shows a remarkable understanding of PD in Chinese medical science; and prescriptions for treatment also sprang up in the following centuries.

Another example is the Egyptian text around 1200BC, which describes the symptom of drooling found in some PD patients. The famous Greek physician Dr. Galen (AD 129 - c 210) wrote a treatise on various types of tremors. He described a patient with multiple symptoms of PD (expressionless face, rigidity, rest tremor, constipation and psychiatric symptoms).

The French neurologist Dr. Jean-Martin Charcot (1825-1893), in appreciation of Dr Parkinson's contribution to the description of the condition, had the disease named as PD. It is, however, important to note that in as much as the first systematic description of the PD is attributed to Dr. James Parkinson, the disease and all its four cardinal signs (tremor, bradykinesia, rigor and postural instability) had been described much earlier in 1690 by Dr. Ferenc Pápai

Páriz (1649 -1716) in his medical text "*Pax Corporis*." This book was written in the Hungarian language and was unfortunately unknown to the pool of medical literature in the main European languages, such that Dr. James Parkinson's systematic description of the disease was believed to be the first as such. Dr. Páriz's published description was in fact over 125 years before Dr. Parkinson wrote his classic essay in the English language.

In the 1950's, Dr. Arvid Carlsson of Sweden discovered the dopamine system of neurotransmitters in the brain. With others they discovered that the chemical L-dopa (levodopa), which is converted to dopamine in the brain, is capable of being used as a treatment for people with PD. For this, Dr. Carlsson and two others were awarded a Noble Prize. All this eventually led to the use of levodopa to treat PD. It soon became evident, however, that the usefulness of levodopa in treating motor symptoms of PD diminished with time, and that the dyskinesia grew worse with time. George C Cotzias (1918-1977) pioneered a form of gradual build-up of the dosage of levodopa that produced lasting results. In 1970's, it was found that the addition of carbidopa to levodopa ("the combination now known as "co-careldopa") helped the absorption of levodopa by the brain. Other drugs for the treatment of PD have since been developed. A new class of drugs called "dopamine agonists" have recently been developed for efficacy but with a different set of side effects. At some point where the drug therapy is no longer effective, or the side effects are unacceptable, physicians are referred to for possible surgical approach. If the problem is purely one of tremor (which is very rare in a late-stage patient), a thalamotomy is considered. In all other instances, a procedure called DBS (deep brain stimulation) by placement of a device is considered.

As part of the historical journey, four other interesting points are noted here. Firstly, in the early years there was

very little one could do for PD patients. It seemed that drooling (excessive salivation) was a characteristic symptom in many patients. Such cases benefitted from use of anticholinergic drugs like benzhexol, which dries up mouth secretions. Additionally such drugs often decreased tremor by blocking the abnormal nerve transmissions. Secondly, all cases of suspected PD need proper evaluation, imaging studies and work-up. Once the diagnosis is confirmed, it is possible to divide the cases into two groups – "early onset" (generally below 60 years age) and "late onset" (above 60 years). The "early onset" cases are going to require a longer period of treatment. In those patients with tremor as the predominant symptom, benzhexol is generally considered, with or without an adjuvant drug such as amantadine. As the disease progresses, levodopa is added. On the other hand, for treating "late onset" patients, the tendency is to start with levodopa early on. Thirdly, it is advised that when co-careldopa (combination of carbidopa plus levodopa) is used, the total daily dose of carbidopa should be at least 70mg. A lower dose may not achieve full inhibition of extracerebral dopa-decarboxylase with a resultant increase in side effects. Fourthly, if a patient with PD has had a stroke, the side of the body affected by the stroke would show improvement in, or even disappearance of, the tremor of PD.

The PD journey will continue with more findings and developments in the understanding and management of PD. For example, there are some findings recently suggesting that an unrelated drug added to the regular PD medications could do more than provide symptom relief for PD. Only time will tell.

Further information is available from some of the co-authors who are PSG members or from APDF (www.africaparkinsons.org). Other references include www.parkinsons.org.uk/content and www.pdf.org/about_pd.

A feasibility study on the use of mobile phone technology in HIV/AIDS health care in Nairobi County

Nyawara S.

¹ *School of Pharmacy, Kenyatta University, P.O. Box 43844-00100, Nairobi, Kenya
Email: sammerion@gmail.com*

Abstract

Technology that involves use of mobile phones is defined as the practice of medical and public health via mobile communication devices. Many mobile phone health applications have been innovated and a range has been recognized by the government in providing healthcare. The problem however is lack of the use and availability of an

efficient mobile phone tool to enhance healthcare for persons living with HIV/AIDS. The objectives of the study were to innovate a mobile phone application that can be used by HIV/AIDS positive persons, to determine patient knowledge of HIV/AIDS, to determine factors that can be monitored using mobile phones and the challenges facing use of mobile phone in the healthcare of people living with HIV/AIDS. The main limitations currently against this system