

Unveiling the Neurology in Sudan

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Editorial

It is my pleasure to write about the neurological diseases in Sudan, one of the largest countries located in North Africa. There are many different tribes live in the country with different culture and genes, this variability give rise to the appearance of many neurological diseases with genetics and epigenetic background. One of these diseases is Parkinson disease in young or early onset parkinsonism (EOPD) it is very common, although its incidence is not yet well identified. In our patients we found that *Pink1* gene was more common than other genes. We screen *Pink1* gene and mutations in exon 4 was sequenced for the first time in Sudanese patients with Parkinson disease. The sequencing results showed that, insertion C at position (V317Rfs*75) was detected in 51% of the patients C>T mutation (rs142183624) was found in 41% of the patients. International data revealed that, several mutations in *Pink1* gene were identified, T313M in Chinese, V317I in Caucasian, M813I in North America. Our study showed V317R with frame shift mutation, L316L and L314P mutations. The study was a preliminary work, and we are aiming to investigate *Pink1* gene in a large sample size.

Another common disease is Idiopathic intra cranial hypertension (IIH) or pseudotumour cerebri which is very common problem in our country, hence it affects young population especially female and cause blindness and lead to permanent disability, we studied the short term outcome of this disease, we found that most of the Sudanese ladies presented with blindness affecting both eyes and severe headache this indicate the late presentation of patients interestingly, they respond magically to the treatment inform of diuretics, lumbar puncture, therapeutic drainage, surgery in form of Ventriculoperitoneal shunt and optic nerve fenestration. We also investigate the risk factors of the disease in a prospective study at the national centre for neurological science during 6 months duration based on modified dandy criteria, the commonest risk factors interestingly was found to be topical use of steroid was found in 30% followed by systemic steroids in 27% and oral contraceptive pill (OCP) In 20% most of the patients BMI was found to

be between 20-25. Most of the patients recover completely 63%. Another common disease in the country is Demyelinating disease like Multiple Sclerosis and Neuromyelitis optica. Multiple sclerosis is a common demyelinating disease worldwide especially in temperate climate countries and in a white population, it seems to be very rare in people of African descend but recently the disease found to affect the Sudanese population. We studied 61 patient with definite Multiple Sclerosis according to Poser & MacDonald Criteria, the disease patterns was similar to worldwide presentations; pyramidal, sensory, cerebellar and optic nerve involvement was the commonest presentations. Investigation showed CSF oligoclonal band, Brain Imaging MRI brain with sagittal FLAIR and MRI cervical spine showed multiple plaques with different ages. Most of the patients respond well to Methyl prednisolone followed by oral steroids in the acute relapses and the patient continue on Immunosuppressant drugs such as Azathioprine and Methotrexate with folic acid. Interestingly we declare very good response to Azathioprine regarding the progression of the disease and reduction in the number of relapses. Few patients were taking interferon Avonex, Tacfedra, finglomod, plasmapheresis and other new modality of treatment.

Neuromyelitis optica is not uncommon in Sudan, it is a demyelinating disease affecting the optic nerve and spinal cord, the course of the disease is usually mono phasic with two or less relapses, affecting both gender rather equally unlike Multiple Sclerosis which has a predilection to affect young female. NMO thought to be common in African descend population more than Multiple Sclerosis. The patterns of presentations and the serological biomarkers NMO IgG, serum aquaporin4 were investigated. Seropositivity was detected in most of the Sudanese patients.

Other frequent neurological diseases are stroke, cerebral venous sinuses thrombosis, Epilepsy, infection like brain and spinal cord tuberculosis and other neurological diseases. So, there is to some extend similarities between the neurological diseases in Sudan and the neighbouring countries.