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Cerebrospinal Meningitis Outbreak in Nigeria

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Cerebrospinal meningitis (CSM) is the inflammation of the tissues of the meninges (dura mater, arachnoid mater and pia mater) — covering of the brain and the spinal cord. It is an important cause of morbidity and mortality in many regions of the world (1-3). It may be due to infectious agents such as viruses, bacteria and fungi. Rarely, meningitis can be caused by certain medications. The signs and symptoms of CSM include headache, fever, vomiting, seizures, reduced consciousness, fatigue, nuchal rigidity, and positive Kerning's and Brudzinki signs. The disease can affect children, young adults and old people. However, children are at particular risks of developing serious complications. Cerebrospinal meningitis is transmitted through the nose and throat secretions such as during sneezing and coughing.

Although there is epidemiological transition from communicable to non-communicable diseases such as stroke, hypertension, diabetes mellitus, arthritis and sickle cell disease world over, infectious diseases still remain a burden in some developing countries. For instance, recently there was an outbreak of Cerebrospinal Meningitis in Nigeria involving 16 states of the Federation with a recorded 2524 cases and 328 deaths so far (4-5). In one of the states located up north of the country, in just the last 2 months, about 1864 cases and 215 deaths were recorded since the outbreak. This was according to the State Government Spokesman (5). Even in the past years, there were many reports of outbreaks that claimed many lives. This is not surprising as the country is known to be in the Africa Meningitis Belt along many other countries including her immediate neighbours, Niger and Cameroun. Thus, with the easy movement of people across the borders of Nigeria from these members of Africa Meningitis Belt coupled with the rapidly increasing population of Nigeria, and the not so well developed Primary Health Care Services, the country can make a very good customer for such outbreaks.

Figure 1 Map of Nigeria

In response to the outbreak, the country's Ministry of Health made some laudable efforts. The efforts were measures to properly diagnose, treat, and isolate the infected persons (4). However, these measures are only short term in nature and do not consider the patients' situations in the medium and long term. This is because, in the medium and long terms and perhaps even in the short term, the infected persons may develop neurological and musculoskeletal and even respiratory complications. For instance, inflammation of the meninges may eventually injure the brain cells especially in the developing brain leading to mild brain injury or Cerebral Palsy. In either case, the affected persons may develop rigidity, which may eventually lead to development of contractures, reduced chest excursion and disability. Therefore, crit-

ical looks at the measures will show that measures to prevent complications and in particular disability for those who have already been infected have not been emphasized in the laudable response by the Federal Ministry of Health.

During an outbreak like this, an interdisciplinary response to the disease is most desirable. To this end, the Neurological, Musculoskeletal and Respiratory Physiotherapists who are experts in the rehabilitation of people with neurological, musculoskeletal and respiratory conditions— involving prevention at the secondary and tertiary levels, can play a major role. Consequently, the people affected will need to be evaluated for impairment of brain function and signs and symptoms of musculoskeletal and respiratory complications. Those with signs of the impairment in brain function such as motor function, may benefit from Neuroplasticity induced specific rehabilitation such as task specific training, stretching and/ or Range of Motion Exercise and therapeutic positioning to prevent contracture, and Chest Physiotherapy to prevent respiratory complications (6-8). Hopefully, the task specific training can help to prevent mal-adaptation of the brain in case of impaired motor function. This is because, the brain especially that of the child is very malleable, and can therefore learn very quickly under training. And when the window period (early post brain impairment) is utilized, this may optimize functional adaptation through use dependent plasticity (9); and prevent the impairment from progressing to a severe form.

Similarly, preventing contracture from developing can prevent surgery or disability in the future. Surgery can be costly especially to those who earn below $1 per day. Secondly, cost of disability in terms of psychological burden, poverty and productivity cannot be overemphasized. Additionally, Chest Physiotherapy can help prevent lungs collapse, accumulation of secretions and airway obstruction. The types of Chest Physiotherapy that can be given to these patients include Chest Expansion Exercises, Percussion, Clapping or Shaking with Postural Drainage and Deep Breathing Exercise to dislodge and drain accumulated secretions. Thus, advisably, anywhere there is an outbreak of meningitis; Physiotherapists have invaluable contributions to make especially in the area of secondary and tertiary levels of prevention. Therefore, stakeholders such as National and State Governments and the WHO should ensure that Health professionals whose services are needed are assembled to help curtail public health problems an outbreak may come with. Indeed, a stitch in time may save nine lives in the future.

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