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Trigger for Neurological Diseases: Some Clinical Observations

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Abstract

Global burden of neurological diseases is increasing by leaps and bounds. Prevalence of neurological diseases in developed countries is as high as 32% compared to developing countries like India where it is merely 2.4%. In India, incidence and prevalence of neurological diseases is spreading from urban to rural areas. In addition to regular medication like dopamine and anticholinergic medications from concurrent prescriptions, patients were advised to change their pure iodised sodium salt to natural salt containing micro- and macro-minerals and trace elements without interference to original medication. In some cases natural magnesium supplements are also recommended.

All subjects exhibited improvement in their reflexes and quality of life in periods ranging from couple of weeks to months. Younger subjects showed better response. It appears that nerve cells were deprived of required essential nutrition on account of chemical imbalances created by pure sodium in the table salt. This could be one of the major causes of various neurological disorders.

Keywords: Cerebrovascular Disease; Nervous disorder; QOL; Anticholinergic medications

Introduction

According to New American Neurological Association Study, burden of neurological diseases was nearly $789 billion in 2014. In 2011, US had about 32% of the population suffering from one or more of 1000+ neurological diseases [1].

The number of deaths in England relating to neurological disorders rose by 39% over a period of 13 years by 2014 while deaths in the general population fell by 6%; epilepsy induced deaths increased by 70% between 2001 and 2014, with mortality in the most deprived areas nearly three times that in the least deprived [2].

India is estimated to have prevalence of neurological diseases on the average of 23940 per million populations and a total of about 30 million in 2014 which amounts to about 2.4% of the population [3].

Subjects were already on regular medication for various neurological disorders like dopamine and anticholinergic medications over couple of years from concurrent prescriptions without improvement. Such patients were advised to change their pure sodium intake to natural salt containing micro- and macro-minerals and trace elements (MMTE) without interference to original medication. In some cases natural magnesium supplements were also recommended.

Overview

A male subject (General Medical Practitioner) aged about 76 years, was suffering from Parkinson's disease, somewhere between Stage-3 and Stage-4, for over 17 years. Despite dopamine and anticholinergic medications, his condition progressively deteriorated to a position where on waking up in the morning he could not turn slippers upside up with foot to put in his feet. He was switched over from iodised pure sodium salt to Himalayan pink rock salt containing more than 80 MMTE for about a year with no other medication changed. Within a span of about seven months he reported significant improvement in his physical movements and overall quality of life; he was able to turn his slippers upside up. In one case subject had difficulty in recognizing family members with names and surroundings with no control over bowl and bladder. She was in almost anosognosia state responded positively when put on the natural salt and magnesium food supplements within six weeks of supplementary treatment.

Improvement in quality of life in case of depression and migraine patients is remarkable and some of them quickly get free from anti-depressants and analgesics. Interestingly it is found that the response of younger adults is faster than older once as expected due to high energy levels and capacity to recoup.

From time immortal, global inhabitants were dependent upon natural resources for water and salt that are inherently rich in MMTE. This natural dependence has played decisive role in the biological evolution of human body. In last 6-7 decades, there has been a large scale change in dietary pattern and large section of global urban population has moved from natural resources to processed products for various reasons. This dietary revolution has deprived human body from daily default intake of MMTE.

An enormous gap between prevalence of neurological disorders in developed countries like US and UK and developing countries like India compel for etiology study. Deprivation of daily intake of MMTE and sometimes hypomagnesaemia appears to be among the major causes for large scale prevalence of neurological disorders. For example, recommended daily allowance for magnesium increases with the increasing age since birth and saturates over 50 years of age at 420 mg for males and 380 mg for females. Himalayan rock salt contains about 80-100 times more magnesium compared to table salt and Celtic salt contains more than 200 times thus fulfilling the human requirements.

Precisely controlled movements of ions into and out of cells and organelles are essential for all life. For example, in cells ion flows

mediate processes as disparate as signaling, pH balance, volume regulation, and the cell cycle, and in higher organisms they underlie fertilization, immune responses, secretion, muscle contraction, and all electrical signals in nerves, muscles, and synapses [4]. Ambipolar diffusion involving large number of different ions has recently been studied by Sodha and Agarwal [5].

Above observations made on different subjects over a decade show that rich and fanciful diet is not alone sufficient to keep neurological disorders at bay. Despite intake of natural products (nuts, fruits, etc.) and supplements for countering magnesium deficiency, there is an increase in prevalence of the neurological diseases in developed countries. Perhaps it is because everyone in developed countries also can't afford expensive magnesium supplemented food on regular basis unless magnesium deficiency is diagnosed at the health clinic; clinical test for serum magnesium is least thought unless there are visible symptoms like unexplained constipation, weakness, tremors, and muscle twitches. It means there is "something" else that trigger the onset of disease and that "something" best appears to be MMTE deprived table salt consumed every day. In India also, incidence and prevalence of hypomagnesaemia related neurological diseases spread from urban to rural areas with the onslaught of iodised table salt through state promulgation ban on natural salt consumption.

So far US Food and Drug Administration could understand and identified 60 elements of the natural salt as essential nutrients. In June 2016, the US National Research Council labeled just 29 of these 80 micro and trace elements as "possibly" or "probably" essential and beneficial to human health [6]. These include bromine, boron, chromium, calcium, copper, fluoride, iodine, iron, manganese, magnesium, molybdenum, potassium, phosphorus, selenium, silver, sulphur, and zinc. 14% fraction of natural salt comprising of MMTE that contains these 29 identified essential elements is large enough to ignore and neglect.

Manufacturing of iodized table salt removes MMTE from sea salt and rock salt that contribute about 14% by weight and substituted with pure sodium in daily dietary intake. This large MMTE replacement by NaCl causes major changes in electrolyte composition leading to impairment of more than 300 fundamental processes in the human body such as functioning of Na+/K+ pump, calcium pump, proton pump and various thermodynamic and biological functions that are largely dependent on the concentration of various components. Study of functional impairment of various body processes like transport mechanism of electrolyte ions has been attempted on the basis of principles of physics [7-9].

The Na+/K+ pump has a "housekeeping" role rather than a direct role in brain signaling; this was the long-held entrenched viewpoint [10,11]. However, novel research upon cerebellar Purkinje neurons suggests that the Na+/K+ pump may have a direct role in brain coding and computation [4].

Conclusion

An elementary demographic study strongly reveal major incidence of neurological disorders in Indian cities where almost 100% of population depend upon pure sodium salt compared to almost non-existence of the disease in rural areas where population still depend upon raw natural salt due to economic reasons. This preliminary study and clinical outcome suggest a definite role of pure sodium on incidence and growing neurological epidemic whose control appears in humble natural salt. Thus, it is better to take natural sea salt or rock salt as a preventive measure for neurological disorders instead depending on trace elements supplements after appearance of symptoms of neurological diseases.

Conflicts of Interest

There is no conflict of interest.

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