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RESEARCH ARTICLE

THERMOREGULATION AND GLOBAL WARMING SYNDROME.

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I was in practice, as an internist for 34 years before retiring; then spent 20 years researching space flight - vascular complications, focusing on correcting Mg deficits. In practice, I often had to go 20 miles to the emergency room in consultation. I was called once to see a runner in his thirties with heat stroke and fever of 108 F; the mortality rate is 50%. I cooled him down, treated him with intravenous fluids, and discharged him in the morning. My mentor, beginning in the nineties, was the late Mildred Seelig M,D, who invited me to present at magnesium conferences in Austria, France, Australia, Japan. (1-3)

I was influenced by Durlach's recommendation of maintain a favorable Ca/ Mg intake ratio of 2:1; (2) if too high it would interfere with Mg absorption;(3) I adhered to this pursuit ever since Durlach's paper was published; continued to ignore several symptomatic and physical warnings, assuming I was "healthy"; I never mentioned my medical problems to my internist during my annual physicals.

I have a lactase deficiency (4) with gastrointestinal intolerance to milk, substituting yogurt daily for my calcium requirements. Since my primary interest for decades has been correcting Mg deficits, and in turn assuming I was maintaining a favorable Ca/ Mg intake ratio of 2:1; I adhered to what I had assumed was adequate in maintaining good health but my assumption was wrong and it almost cost me my life. How many others are unaware of the absolute necessity of making certain that this ratio dos NOT apply to all of us? Can there be a case of " too much of a good thing? "

I have experienced life-threatening accidents for decades, i.e. as a Flight Surgeon, losing an engine on take-off in a C119 Flying Boxcar (coffin) facing a mountain in El Paso, Texas; a fire at 3 A.M. starting in our basement and damaging the roof; a near-drowning off the Australian Great Barrier Reef; an elephant charge in Zambia on foot safari, stopped by a warning shot at a paced -45 yards; as a Coast Guardsman, on a leaking patrol frigate in the North Atlantic, off Iceland.

But my recent near - fatal event occurred while going 75 M.P.H., late for a meeting. I suddenly lost proprioception of my right foot; was it up, down, to the left or to the right? Also I had been having , for the previous several months, an increasing frequency of cramping pain of the right leg, as often as 5 or more times a day --- necessitating my standing quickly for relief; for several years, I also experienced cramping of my left hand,

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sometimes accompanied by spasm of the forefinger and thumb, coming close to a deformity of these fingers --- invariably while driving long distances.

In addition, in 2011, at a Chinese restaurant, the night before flying to Beijing for a presentation and enjoying a large bowl of rice with a tasty sauce, I suddenly experienced---for the first time, an inability to swallow it, necessitating my waiting for at least 15-20 minutes to digest it with offset excessive saliva. Apparently, it was obvious that I was in distress, since the hostess asked me twice whether I was all right; this dysphagia is commonly triggered by rice, without much help even with water or chewing it; on occasions, excessive saliva necessitated spitting; not very pleasant, while walking in fancy surroundings.

How could I tie this up into a neat package? I decided that if I were to survive I had to make some adjustments in my life style. I empirically tripled my yogurt intake, reduced my sufficiently absorbed magnesium citrate from a total of 800 mgm to 600 mgm/ day, stopped pyridoxine (vitamin B6) which enhances Mg absorption.

Lo and behold, the leg cramps soon became less frequent and in a day or two stopped, along with my very troublesome dysphagia and increased saliva; up to this point, I had avoided long automobile trips to test my left hand problems but just to be more certain, bought a brand new car with state of the art braking; my wife is suspicious as to my motivation but I have been able to tie the loose ends.(5-8) Prior to repeated searches by a devoted medical school librarian, I couldn't put the pieces together.

I have published an award-winning paper, (1) that correcting magnesium deficiencies may prolong life because it is both a Ca blocker and a powerful antioxidant; with my interest in the cardiovascular complications of space flight, I have shown the mechanisms regarding James Irwin's first of 4 myocardial infarctions, only 21 months after his mission; why Neil Armstrong developed lunar heart failure in just 4 days after lift-off ---- prior to his inhaling highly toxic iron-laden lunar dust, brought into the habitat on his space suit.

With noon temperatures of 250 F, a poorly designed "air conditioned" space suit which carried only 32 ounces of water, one can readily see how the combination of dehydration, high catecholamines to twice Earth levels, invariable Mg ion reductions in large groups of astronauts and cosmonauts ($p < .0001$) with vicious cycles, can trigger deadly acute heart failure.(5) We certainly don't belong in Space!

Since Mg deficiencies invariably occur with space flight, along with poor convection, triggered by endothelial dysfunction, with sweating (6) and also renal loss (7), it is apparent that Mg plays a vitally important role in thermoregulation and in turn, may prolong life. (1.)

My combination of symptom and signs, involving skeletal muscle complications and dysphagia is supported (8) but will require more research involving my near fatal impaired proprioception. But it is clear, that there apparently is an important tie-in between impairment in thermoregulation and global warming, (9-11. predictably, progressively life-threatening over the next 50 years or so. Man can't survive without water and magnesium; certainly both are required for optimal endothelial function. It has been estimated conservatively that 60 % of Americans have a Mg deficit and it is a world - wide problem; a major contributing factor is an improper diet, particularly among the elderly and those who are poverty stricken. (1)

As for water, in some areas of western Africa, children can't attend school because they must spend 5 hours a day in search of it; in some areas of the Kalahari desert in south central Africa, some spend as much as 11 hours a day! Some fashion a "straw" from what they can find; (personal communication, (Robert Hitchcock PhD) . Some may, out of desperation, want to bury their heads in the tropical sand. How many of us in cities, over the next 50 years will feel the same way? Africa provides a preview. Having made 8 trips to Africa and having flown over the Kalahari desert, I have indeed witnessed a preview; those who deny our threat, may also be burying their heads in the sand.

Conclusion:-

This combination of loss of proprioception, skeletal muscle contractions, distortion of the digits and dysphagia is specific and meets the criteria of a new syndrome. I believe it represents a wakeup call regarding global warming, but also important is the fact that construction workers and those who climb mountains, for example, should be apprised of this potential impaired proprioception risk, triggered by an improper Cc/ Mg intake ratio.

Dedicated to the memory of the late Norman Carr who survived a charge by a Cape Buffalo; began safaris on foot along the Luangwa. Many thanks to Jodi Jameson MLIS AHIP, Mulford Health Science Library, University of Toledo.

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