

The link between salt and neurological disorders: the mediation of alpha emitting nanoparticulates as simple explanation

Florent Pirot, MA*

Keywords: alpha decay, alpha-emitting nanoparticulates, Alzheimer, health physics, neurological disorders, Parkinson, plutonium, radium, thorium, uranium

The massive list of effects of the contamination with alpha emitting nanoparticulates and their alpha decay has already been demonstrated with a massive array of epidemiological data by the author.¹ It should be underlined that for alpha emitting nanoparticulates of a certain dimension, the damage is both caused by the shelling of helium nuclei onto surrounding cells by the atoms decaying on the outside of the nanoparticulate, and by the vibration and heat from the decay of the many atoms inside the particle (as these helium nuclei cannot escape because they are trapped inside the nanoparticulate, but cause vibrations and heat instead), and this damage is linear with no minimal threshold in proportion with the intake of alpha radioactivity.

The particles are slowly eliminated by the body, through miction and all the other corporal fluids. They naturally gravitate to the bottom parts of the body. Variations can be observed as concerns the type of effect of the internal contamination. The most significant increases for Serbia and Bosnia-Herzegovina over the WHO DALYs for the 2000 to 2015 period, on meaningful noncommunicable diseases, have been selected.

Serbia shows few diseases rising but one extremely brutal spike, on neurological disorders: *Alzheimer and other dementias* with +789%, *other neurological disorders* with +106%, and *other neoplasms* +143%.

For Bosnia and Herzegovina the variations have a bigger dispersion and more limited increases : +123% in *Alzheimer and other dementias*; +146% in *cardiomyopathy, myocarditis, and endocarditis*; +127% in *liver cancer related to hepatitis C*; +102% in *multiple myeloma*; +93% in *liver cancer relative to hepatitis B*; +91% in *prostate cancer*; and +94% in *ischemic stroke*.

Alpha particles being positively charged are more likely to be attracted by Cl-rich parts of the nervous system. A study in mice deficient in the cation-chloride channel² found a lack of nervous excitability. Because of the deficiency, chloride accumulates in the

cells, which become thus more attractive for the alpha decay of nanoparticulates. This simple chemo-physical pathway explains, in case of accumulation of chloride in the nervous system with for instance a salt-rich diet, known for increasing nervousness, the acute vulnerability of neurons to alpha decay and the possibility of major seizures in spite of a very limited contamination. In Serbia the custom of welcoming guests with bread and salt before drinking has to be related to the tendency of depleted uranium contamination to affect nerves.

For Alzheimer and the accumulation of beta-amyloid and tau proteins into the brain, a pathway related to endocrine disruption because of the decay of alpha emitters is the most simple hypothesis. The endocrine disrupting effect of alpha emitting nanoparticulates was already observed in the first study of the author. The overproduction and lack of assimilation of the proteins because of the decay damage are two convenient co-explanations.

The more elevated levels of physical activity in younger subjects explain the increased levels of deposition of alpha emitting nanoparticulates into the cardiovascular system. As, in younger subjects doing physical activity, they travel longer distances in blood vessels over a similar period of time, they pass for instance through the heart more frequently; the complex, angular patterns of the heart mean that the (relatively heavy) nanoparticulates have more risks of hitting its walls, and of remaining trapped into its organic matter. Similar effects can be predicted in narrow blood vessels, and in the feet and legs where inflammation has been widely observed for instance in Gulf War Syndrome veterans, as nanoparticulates accumulate there due to gravity and compression.

References

- [1] Pirot F. Alpha emitting nanoparticulates, the forgotten pollutant, in From an Einstein Syndrome to the People, Editions Universitaires Européennes, April 9, 2019, 28-46.
- [2] Rinke I, Artmann J, Stein V. ClC-2 voltage-gated channels constitute part of the background conductance and assist chloride extrusion. *J Neurosci*. 2010;30:4776–4786.

Unaffiliated Researcher.

* Corresponding author. Unaffiliated, Pornaleg-Leskon (Plobannalec-Lesconil), France. E-mail address: florent.pirot@orange.fr (Florent Pirot).

Copyright © 2019 The Authors. Published by Wolters Kluwer Health, Inc. on behalf of PBJ-Associação Porto Biomedical/Porto Biomedical Society. All rights reserved.

This is an open-access article distributed under the terms of the Creative Commons Attribution-Non Commercial-No Derivatives License 4.0 (CCBY-NC-ND), where it is permissible to download and share the work provided it is properly cited. The work cannot be changed in any way or used commercially without permission from the journal.

Porto Biomed. J. (2019) 4:6(e55)

Received: 22 June 2019 / Accepted: 3 October 2019

<http://dx.doi.org/10.1097/j.pbj.0000000000000055>