Conference presentation

Homeopathy as a tool for enhancing Cognition in

Senescence/Senility: Experimental Model.

Victória Arrifano¹, Larissa Cristina Ares Silveira da Motta¹, Maria Martha Bernardi², Cidéli de Paula Coelho^{2,3}

1. Santo Amaro University (course in progress), São Paulo, Brazil

2. Research Center of Paulista University, São Paulo, Brazil

3. Santo Amaro University, São Paulo, Brazil

Correspondence author: Cidéli de Paula Coelho, cpcelho@unisa.br

Background: Several comparative and experimental studies have shown that elder subjects show performance significantly prejudiced in different types of cognitive tasks¹. The aging process is extremely complex and multifactorial, due to its multidisciplinary nature. Therefore, it is greatly important to study medications that can reduce the losses induced by aging in men and animals. **Aim:** The objective of this study was to evaluate the action of homeopathic medication in locomotion and enhancement of cognitive tasks, prejudiced by senescence/senility in rats.

Materials and Method: 32 Wistar rats were used, all male, 22 to 23 months old of age, from the Santo Amaro University (UNISA) Bioterium. According to Andreollo et al. (2012)² and Segunpta et al. (2013)³, a Wistar rat at the age of this study can be compared to a human over 60 years old. However, in laboratory conditions, hardly ever an animal (Wistar rat) reaches this age, therefore, research mice are considered elderly. The number of animals chosen for this study was in accordance with the 3Rs rules (Reduction, Refinement, Replacement - www.nc3rs.org.uk/ARRIVE). All males were maintained in cages with ad libitum access to food and water, in a controlled light cycle of 12:12 hours (7h/19h). Medications were made based on the Brazilian Homeopathy Pharmacopeia. The animals were distributed randomly in 4 experimental groups (4/cage), with 8 animals per group, and the following medications were administered in the drinking water ad libitum (5 drops/drinking bottle): *Calcarea carbonica* 30 cH; *Baryta muriatica* 30 cH; Hydro alcoholic solution 10%; White Control (no medication). The experiment was conducted in blind and the medications used in code, only revealed after the statistics were conducted. The animals were weighed weekly and were subjected to Open Field (OF) on day 1 of the experiment; after 40 days of medication the animals were subjected to the Open Field (OF) test and to "T" Maze learning test⁴. Data were analyzed statistically by ANOVA, followed by the Bartlett's Test and Bonferroni's Multiple Comparison Test and Kruskal Wallis e Dunn, being $p \leq 0.05$.

Results and Discussion: All groups lost weight during the experiment except the group *Calcarea carbonica*, that gained weight ($p \leq 0.05$). In the beginning of the experiment there was no statistical difference between groups in OF, demonstrating uniformity amongst animals. After medication, when subjected to OF, it was observed an increase of the walking quadrants ($p \leq 0.05$) in total locomotion and decreased of Freezing in the groups treated with *Calcarea carbonica* e *Baryta muriatica* ($p \leq 0.05$) relative to the White Control and Hydro alcoholic solution groups, demonstrating better disposition of the medicated elderly. It is known that aging accelerates neurodegenerative processes, leading to cognitive dysfunctions⁵, however in the "T" Maze test learning test, it was seen an increased correct responses in the group treated with *Baryta muriatica* 30 cH, suggesting enhancing the elderly's memory⁵.

Conclusion: The drugs were able to increase the locomotion of animals and *Baryta muriatica* improved the cognitive responses in animals compared to the other groups.

Keywords: Homeopathy, Senescence/Senility, Experimental Model, *Calcarea carbonica*, *Baryta muriatica*.

Cite as: Arrifano V, da Motta LCAS, Bernardi MM, Coelho CP. Proceedings of the XXX GIRI Meeting; 2016 Sep 09-11; Netherland. *Int J High Dilution Res.* 2016;15(4):18-19

Conflict of interest: authors declare there is no conflict of interest.

Statement of financial support: authors declares that this study received no funding.

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