Int J High Dilution Res 2012; 11(40):152-153
Proceedings of the XXVI GIRI Symposium; 2012 Sep20-22; Florence (Italy)

Oral Section

Evaluation of immune response of BALB/c to homeopathic solutions

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ABSTRACT

Introduction: Biotherapics are medicines prepared from etiologic agents, following Brazilian Homeopathic Pharmacopeia. Influenza is a disease that affects thousands of people worldwide every year, motivating the development of new therapies.

Aim: In this study, we developed two biotherapics from live/active influenza A virus, at 12x and 30x, and verified some immune response parameters in mice.

Methodology: The biotherapic was administered to male SPF 4 weeks old Balb/c mice. The protocol was approved by the UFRJ Ethics Committee of Animal Use (Protocol DFBCICB 040). Animals were stimulated daily, blindly, with different homeopathic medicines, at 1% (V/V) for a maximum period of 42 days. Three homeopathic medicines were tested: biotherapic 30x containing active influenza A virus; biotherapic 12x containing active influenza A virus; and thymulin 5cH. The experimental groups were: Group A (5 animals) – administration of thymulin 5cH, Group B (5 animals) – administration of biotherapic 30x, Group C (5 animals) – administration of biotherapic 12x, Group D (5 animals) - administration of a water 30x, Group E (5 animals) - administration of a water 12x, Group F (5 animals) - control (without treatment). After 21 days of treatment, all animals were challenged subcutaneously with the viral hemagglutinin antigen at the concentration of 7 μg/200μL and monitored by further 21 days. After euthanasia, all animals were autopsied and the spleen was collected for weight and immunehistochemistry analyses. Additionally, peritoneal washing was done and a "pool" of samples from each group was prepared to be analyzed by flow citometry.

Results: Mice treated with biotherapic 30x and thymulin 5cH showed similar profile, different from controls, in which a switch of lymphocytes/phagocytes proportion in the peritoneum was seen, followed by predominance of B1b cells in relation to conventional B and T cells (X^2, $p=0.005$). Regarding to T cell population, in the contrary to control, CD4+ cells were predominant in relation to CD8+ cells (X^2, $p=0.0001$). The immunehistochemistry revealed increase in the number of activated CD11b+ macrophages in spleen ($p<0.05$), but no difference were detected in the spleen lymphocytes profile.

Conclusion: The results show that the action of biotherapic 30x and thymulin 5cH have similar immune modulation effects, improving the innate immune response.

Key-words: Biotherapic, Influenza, flow cytometry, immunehistochemistry, animal model.

Support: CAPES
Conflict of interest: authors declare there is no conflict of interest
Received: 01 June 2012; Revised: 10 August 2012; Published: 30 September 2012.
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How to cite this article: Siqueira CM, Bonamin LV, Motta PD, Cardoso TN, Coelho CP, Couceiro JN, Holandino C. Evaluation of immune response of BALB/c to homeopathic solutions. Int J High Dilution Res [online]. 2012 [cited YYYY Month dd]; 11(40):152-153. Proceedings of the XXVI GIRI Symposium; 2012 Sep 20-22; Florence (Italy). GIRI; 2012; Available from: http://www.feg.unesp.br/~ojs/index.php/ijhdr/article/view/599/594