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Underlying mechanisms indicative of autoimmunity in silica-exposed workers

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In the present study we investigated underlying mechanisms indicative of the presence of autoimmunity in workers exposed to silica (n=103). Original results were obtained with the quantification of interleukin-2 (IL-2), soluble IL-2 α receptors (sIL-2R α), Natural Killer (NK) cells and CD8⁺/CD4⁺ lymphocytes. Reduced levels of IL-2 and CD4⁺ cells were observed in the exposed population, in association to significant increases in the levels of sIL-2R α , NK cells (CD16⁺ and CD56⁺ subpopulations) and T CD8⁺ cells. These findings are relevant in view of the fact that IL-2 is essential for natural tolerance and prevention of autoimmune diseases due to its involvement in the differentiation and function of T CD4⁺ lymphocytes. Moreover, NK cells are recognized by promoting tissue damage, induction of autoimmunity and development of fibrosis. In addition, sIL-2R α receptors liberated in the circulation by activated T lymphocytes are used as biological markers of immune activation. The results we obtained in this area generated relevant information for the more precise conceptualization of autoimmune pathogenic processes whose origin is questionable.

Biography

Mary L S Queiroz has completed her PhD from the University of Manchester, England, and her Postdoctoral studies from WEHI, Melbourne, Australia. She is a Full Professor, Director of the Laboratory of Immunopharmacology, Medical Faculty, UNICAMP, Campinas, Brazil. She has published more than 80 papers in reputed journals and presented several pioneer and original results in the literature. She worked as a World Health Organization (WHO) Temporary Advisor to the preparation of the International Programme on Chemical Safety (IPCS) Environmental Health Document Principles and Methods for Assessing Autoimmunity Associated with Exposure to Chemicals, organized by the United Nations Environment Programme (UNEP), the International Labour Organization (ILO) and the World Health Organization (WHO), through the International Programme on Chemical Safety (IPCS).

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