E-Abstract Book of ICOH Congress 2015

This electronic publication of the abstracts for the ICOH Congress 2015 contains the program overview, abstracts published for the Congress and other associated reference materials.

The title for the ICOH Congress 2015, Global Harmony for Occupational Health: Bridge the World, reflects our wish to foster harmonized action for managing complex risks in increasingly diverse work situations.

The structure of the scientific program includes Plenary Sessions, Semi-plenary Sessions, Policy Forums, Special Sessions, Oral Sessions, and Poster Sessions. The scientific program will give delegates an opportunity to learn about the latest research and projects conducted by the world's leading scientists and experts in related fields.

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The incidence of micronuclei in buccal mucosa cells as a possible biomarker in the evaluation of occupational risk for MRI workers

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Introduction:
In the framework of the evaluation of possible health risk related to occupational exposure in Magnetic Resonance Imaging (MRI), an experimental procedure has been set up to assess the possible DNA damage in MRI workers. The minimally invasive method of micronuclei screening in buccal mucosa cells in samples collected from volunteer MRI workers and controls is proposed.

Methods:
Working activity, personal information (age, sex, lifestyle), general health conditions and drug consumption are collected by a questionnaire. Controls are selected in such a way to match all the relevant characteristics of worker groups, except for exposure in MRI. The procedure is as follows: 1) collection of buccal mucosa cells; 2) set up of microscope slides of buccal mucosa cells; 3) analysis and classification of cell types by means of optical microscopy; 4) scoring of micronuclei in 1000 total viable cells, among normal basal and differentiated cells; 5) calculation of micronuclei incidence, i.e. the percentage of micronuclei over the total number of cells.

Results:
The collection of data is ongoing to validate the method. Experimental procedure has been preliminary applied in a group of volunteer non exposed subjects, aged 28-49 years. The incidence of micronuclei scored ranged between 3 and 7%. Further samples from other volunteers subjects will be collected.

Discussion:
The analysis of micronuclei incidence in the buccal mucosa cells is used in molecular epidemiological studies investigating the impact of lifestyle factors, and occupational exposure to potentially mutagenic and/or carcinogenic chemicals. Micronuclei incidence has been associated with increased risk of accelerated ageing, cancer and neurodegenerative diseases. The aim of this work is to demonstrate whether the micronucleus assay on buccal mucosa samples can be adopted as a biomarker of genome damage and disease risk for occupational exposure in MRI.

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