

SESSION 4: Physiopathological and behavioural responses to climate changes

ORAL COMMUNICATIONS

METHODOLOGICAL LIMITS AND BUSINESS BIAS IN ENVIRONMENTAL AND OCCUPATIONAL EPIDEMIOLOGY

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Economical conflict of interest generating bias in environmental and occupational studies represents a growing concern potentially affecting primary prevention policies and public health. We analyzed some environmental and occupational epidemiological studies leading to reassuring and/or negative results, in order to identify recurrent methodological concerns and a possible, voluntary origin (*business bias*) of these limitations. We identified a total of 40 possible methodological limitations theoretically causing an underestimation of the real risk/burden of disease in exposed populations. The most frequent concerns were due to wrong selection of the study design and/or of the control populations, analysis limited to a single (often inadequate) disease/risk factor or with an inadequate time window (follow-up/latency period), lack of the overall assessment of attributable cases, inadequate statistical procedures, incomplete description/discussion of results, lack of consideration of the precaution and prevention principles. In some cases a declared or hidden business bias was detected or might be suspected. **Conclusions:** (i) epidemiological/occupational studies with reassuring/negative results might contain biases potentially limiting their scientific value, with possible negative consequences on primary prevention policies; (ii) the possibility of a *business bias* needs to be carefully explored by "studying the study", also considering declared or concealed conflicts of interests.

EFFECT OF HYDROXYTYROSOL ON GLIAL CELL CULTURE

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Hydroxytyrosol is one of the main phenolic components of olive oil. It is present in the fruit and leaf of the olive (*Olea europaea* L.). This phenolic compound has health benefits and a protective action has been found in preclinical studies against several diseases [1,2]. It shows significant results related with cardiovascular diseases, cancer, and acquired immunodeficiency syndrome (AIDS). Mechanisms of action include potent anti-oxidant and anti-inflammatory effects. Regarding the cancer chemo-preventive activities, it has been shown that Hydroxytyrosol is able to inhibit both initiation and promo-

tion/progression phases of carcinogenesis by preventing the DNA damage induced by different genotoxic molecules and by inhibiting proliferation and inducing apoptosis in different tumors cell lines [3,4]. We exposed C6 rat glioma cells to Hydroxytyrosol (10^{-2} M, 10^{-3} M, 10^{-4} M and 10^{-5} M) for 1h, 6h, 24h, to test the effect of this compound on the cellular viability. The data obtained after the MTT test show a significant decrease in vitality in C6 cells, exposed to concentrations of hydroxytyrosol between 10^{-2} M and 10^{-4} M (from 18% to 30%). These data fit well with the immunolocalization of p53 (protein having anticancer function and playing a role in apoptosis) on the cells treated in the same manner. The immunolocalization is present mainly at the 10^{-2} M Hydroxytyrosol and nuclear staining demonstrates nuclear condensation and fragmentation typical of apoptotic events. This shows that the analyzed molecule exerts a toxic action towards this cell type and probably induces apoptosis phenomenon.

References:

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DEMOGRAPHIC EFFECTS OF CLIMATE CHANGES ON THE POPULATION OF CIVITELLA DEL TRONTO IN THE "YEAR WITHOUT A SUMMER"

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In the April of 1815, the eruption of the Tambora volcano (Indonesia) caused in the northern hemisphere a sharp drop in temperature with strong repercussions during the 1816, which was called "The year without a summer". Almost everywhere, the harvests were destroyed. Speculation caused the increase in food prices so the populations suffered the effects of the famine, especially those of the lower classes. Furthermore, at the end of the year 1816 spreads a typhus epidemic lasted nearly nine months. In Civitella del Tronto (TE) the typhus epidemic began in December 1816 and ended in August 1817: during this period the number of deaths increased approximately six times without any difference between the sexes. Deaths of adolescents and adults increased proportionally. The highest number of deaths compared to the pre-crisis period was registered in the villages of the Eastern fractions: mobility in these villages was high, as shown by high values of exogamy, and therefore the greater was the probability of spread of typhus. Because in the documents is not indicated the cause of death it is difficult to distinguish the mortality due to famine from that due to the typhus.