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COLLEGIUM RAMAZZINI
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Schedule of Events
Scientific Program
Abstracts by Session

SCIENTIFIC SESSION II:
ONGOING EXPERIMENTAL STUDIES AT THE RAMAZZINI INSTITUTE

Presentation title:
First results from the Ramazzini Institute carcinogenesis studies of cell phone radiofrequency radiation in Sprague-Dawley rats

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Fiorella Belpoggi is the Director of the Research Department at the Ramazzini Institute, where she has worked since 1981. Her research interests include short and long term toxicity studies on chemicals and physical agents: food additives, solvents, packaging plastics, pesticides, hormones and prescription drugs, vitamins, fuels constituents and additives, endocrine disruptors, asbestos and its substitutes, herbs. gamma radiation, electromagnetic fields from power lines and radio base stations.

Background: Because of the increasing concerns towards the exposure to radio frequency radiation (RFR) of the general population, in 2005 the Ramazzini Institute (RI) started a long-term experimental bioassays to evaluate the potential biological effects, in particular carcinogenic, of electromagnetic fields 1.8 Giga Hertz microwaves of the GSM (1.8 GHz-mw) on Sprague-Dawley rats. In 2013, the IARC classified RFR as a possible human carcinogen based on "limited evidence" of an association between exposure to RFR from heavy wireless phone use and glioma and acoustic neuroma (vestibular schwannoma) in human epidemiology studies, and "limited evidence" for the carcinogenicity of RFR in experimental animals. In 2016, a statistically significant increase in some rare tumors of the brain and heart were reported in male rats exposed to GSM- and CDMA-modulated cell phone RFR (near field) in long-term bioassays performed by the NTP. The tumors observed by the NTP are similar to tumors observed in the epidemiological studies related to cell phone use.

Methods/Approach: To investigate in our animal experimental model (human-equivalent model) the effects of an exposure equivalent to the radio base stations RFR exposure of the general human populations (far field) 2448 rats were exposed to RFR, for 19 hours/day during their whole lifespan, from prenatal life until spontaneous death. Treatment groups included: untreated rats (control group), rats exposed to 5, 25, 50 V/m GSM 1,8 GHz-mw electromagnetic field.

Results: Neoplastic and non-neoplastic lesions for brain and heart will be presented and compared with NTP pathological findings.

Conclusions: The NTP findings already call for the need of a re-evaluation of IARC regarding the carcinogenic potential of RFR (from possible to probable carcinogenic to humans). Should the RI study confirm the experimental evidence reported by NTP, the IARC has urgently to reconsider the potential carcinogenicity of RFR.