

# **WOMAN, HEALTH, ALCOHOL: RISKS AND DAMAGES FROM ALCOHOL IN DIFFERENT WOMAN AGES. THE ROLE OF ABUSE MARKERS**

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The project is a multidisciplinary research that has been performed in collaboration with the NIH-NIAAA (National Institute on Alcohol Abuse and Alcoholism), namely with Prof. Cynthia Bearer, Director of the Neonatology Fellowship Program at the University Children's Hospital of Cleveland.

The collaboration with NIH colleagues that have a well stated experience about the effects of female drinking and prenatal alcohol exposure, gave significant results also as regards the formation of health operators. This facilitated to introduce in Italy the concept of new clinical approaches to alcohol related problems and to suggest "evidence based" preventive strategies.

## **Clinical studies**

Alcohol dependent patients have been examined to evaluate biochemical, immunological, genetic and toxicological aspects due to alcohol exposure with particular regard to gender effects, vulnerability and susceptibility factors, synergic effects of simultaneous exposure to alcohol and environmental toxics, and evaluation of biomarkers suitable to identify prenatal alcohol exposure.

## **Results**

### *– Immunology*

Performed studies identified alcohol related factors of the innate immunity and autoimmunity and suggested their possible use as markers of effect and of exposition. Clinical studies, performed in a limited number of patients, at now have been improving.

### *– Nutritional factors*

The studies about vitamins and oligoelements status in alcoholic patients demonstrated a correlation between alcohol misuse, nutritional status and metals balance. Significant differences were shown to be related to sex and to type of alcohol beverage. These aspects have been considered for animal studies on prenatal alcohol exposure.

### *– Genetic factor*

The roles of genetic polymorphisms of CYP2E1, GSTs, and neurotransmitters have been studied to evaluate their implication in individual susceptibility to alcohol and in its teratogenic effects. Preliminary results suggest new perspectives in the understanding of susceptibility to alcohol effects and in the treatment of alcoholism.

## Animal studies

Research about the foetal alcohol spectrum disorders (FASD) induced by prenatal alcohol exposure in the mice, has been carried out to evaluate biochemical, behavioural and brain alteration.

## Results

The studies in mice to investigate brain alterations and changes in cognition and emotional behaviour due to alcohol exposure, showed heavier side effects depending on the type of alcohol beverage. The reason of this evidence is at now under examination.

## Teaching

Teaching activity is a significant part of the project. In 2007 the first edition of the ISS Course “Woman and child health: clinical and experimental aspects of alcohol exposure” was held. In the second edition 2008, the requests of participants largely exceed the availability of the Course. The Course is the first and at now the unique in Italy that gives to health operators the opportunity to know the up-to-date clinical and experimental research about alcohol related problems in woman, in the dyad mother-foetus and in the child.

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