14th International Conference on

Oxidative Stress Reduction, Redox States & Antioxidants

June 12-13, 2014 – Paris, France

Chairmen of the Scientific Committee

Marvin Edeas

INTERNATIONAL SOCIETY
OF
ANTIOXIDANTS
IN NUTRITION & HEALTH

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Welcome to ISANH Antioxidants 2014 World Congress

Dear Colleagues,

On behalf of the Scientific Committee of the **International Society of Antioxidants in Nutrition and Health** (ISANH), it is a great pleasure to welcome you to **ISANH Antioxidants 2014**, 14th International Conference on Oxidative Stress Reduction, Redox Homeostasis and Antioxidants, which will be held in Paris, next June 12-13, 2014.

ISANH was created in 1998 during the first world congress on Superoxide Dismutase. 16 years later, many positive steps were observed. However, the world of antioxidants is remaining controversial. Many questions still unanswered with many contradictions. We can dare to say today that we failed to find a standard to evaluate oxidative stress markers and antioxidants capacity. We failed also with many clinical trials with good antioxidants because we don't have a "golden standard" to compare the results.

During last ISANH Congress on Antioxidants, one of the main discussion showed that antioxidants play their role by modulating redox signaling pathways and not a counter "balance" to oxidant formation. They act to modulate cells signaling domains in which redox signaling occurs. Mitochondria are a localized signaling domain and ROS (Superoxide and Hydrogen Peroxide) generated by respiratory chain are signaling molecules.

ISANH Antioxidants 2014 will discuss the **mechanisms of redox regulation** of cellular processes. Little is known of what the specific targets of ROS are and how oxidant and antioxidant signals are transmitted in the cell. To understand mechanisms of redox control and its role in all oxidative stress pathologies and aging, we need to know identities and functions of most of the participants in the redox process. We hope that Paris Antioxidants 2014 will provide a better understanding of the role of the aging process and redox control in physiological and pathophysiological states, and will **lead to new therapeutic and disease-preventive agents**.

For this 16th Anniversary of ISANH, we will highlight some specific topics with strategic impact on human health and discuss about:

- **Oxidative Stress, Redox Status & Antioxidants Biomarkers**
- **Redox Proteomics**
- **Redox Regulation & Modulation and Redox-Active Agents**
- **Oxidative Stress & Mitochondria Homeostasis**
- **The Innovations of Oxidative Stress, Redox Modulation and Antioxidants in 2014: Targeting Chronic Diseases**
- **Natural & Synthetic Antioxidants**
- **New Methods of Investigation**

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We would like to thank all speakers for their contribution. We would like to thank especially Luoxis for their support.

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We wish you a nice and excellent conference in lovely Paris.

Pr Marvin Edeas

Chairman of Scientific Committee

EFFECT OF SHORT-TERM VITAMIN E SUPPLEMENTATION ON BIOMARKERS OF (ANTI)OXIDANT STATUS IN HEMODIALYSIS PATIENTS

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Objectives: Recent meta-analysis has demonstrated that patients on maintenance hemodialysis (HD) might benefit from the antioxidant therapy for cardiovascular diseases prevention. In addition, many clinical studies have also demonstrated benefits from vitamin E supplementation in these patients, such as reduced inflammation, increased erythropoietin (EPO) responsiveness, decrease in the number of muscle cramps, etc. The aim of this study was to evaluate the effect of short-term vitamin E supplementation on plasma (anti)oxidant status in HD patients in correlation with their hemoglobin (Hb) concentrations.

Patients and Methods: Patients with end-stage renal disease on maintenance HD (N=16) were supplemented with vitamin E, 400IU/day for a period of 2 months. The patients were adequately monitored and treated with iron and EPO in accordance to the accepted guidelines on a long-term basis. Blood for analysis was drawn before the start of the supplementation, and one and two months later, immediately before the HD session. Biomarkers of (anti)oxidant status: Reactive Oxygen Metabolites (ROM), Biological Antioxidant Potential (BAP), and Total Thiol Levels (TTLs) were measured by photometric methods using commercial test kits. Uric acid and total proteins were measured by standard methods on an autoanalyzer. Hemograms were obtained with a five part differential hematology analyzer. Healthy subjects (N=20) were included in the study as controls.

Results: Overall, with the vitamin E supplementation there was a statistically significant decrease of BAP, and a clear, yet still not statistically significant, trend for increase of ROM. In addition, the TTLs significantly decreased. The changes of BAP and TTLs were not accompanied with statistically significant changes in plasma concentrations of uric acid and total proteins. When the patients were divided in two groups: a) Hb<120g/L (N=6) and b) Hb≥120g/L (N=10), it appeared that the significant changes in the (anti)oxidant status detected by the biomarkers used in this study are characteristic for the group of patients with Hgb≥120g/L only. In addition, a significant decrease in the uric acid also appeared in this group of patients. Although the changes in the (anti)oxidant status were very slight in comparison to the basal values and the values measured in the healthy subjects, they were more pronounced after two months of vitamin E supplementation, and might be indicative of its prooxidant effect.

Conclusions: Patients on maintenance HD respond differently on the vitamin E supplementation which is related to their Hb concentrations. Further studies are needed to establish the doses adequate for long-term supplementation and the most adequate biomarkers for monitoring of effects.