HNE CLUB MEETING

LIPID OXIDATION: NEW BIOCHEMICAL INSIGHTS AND CLINICAL APPLICATIONS

October 10-12, 2024

Genoa, Italy

Venue: Department of Economics, University of Genoa, Hold Harbor

General comments

The Genoa Meeting was the first post-pandemic meeting of the HNE Club The Club was used to organize a meeting at least every two years. Thus, the Genoese edition has allowed to renew vitality and possibly continuity to this international scientific association conceived in 2000.

There were 62 active participants at the Genoa Meeting, coming from 12 countries besides Italy: Japan, China, USA, Croatia, France, Germany, Serbia, Slovakia, Poland, Austria, Turkey, United Kingdom. Importantly, the international component represented 73% of participants.

The readings (25 min + 5 min discussion) were 7 and 19 were the oral presentations (15 min + 5 min discussion). It was worth of note that 15 out of 26 presentations were made by young researchers.

Scientific contents

1- Products of the oxidation of body fats: from laboratory to clinical practice

The toxicity of lipid peroxidation derivatives has been considered for its impact on immune response, cardiovascular function, aging of the body in general, with insights into skin aging and in the pathogenesis of obesity.

2- HNE (4-hydrosinonenal) and oxidized lipids in Human Pathophysiology - Part One

The role of these lipid oxidation compounds has been deeply analysed in a wide spectrum of physiological and pathological settings, namely general metabolism, communication relationships between cells, blood-brain barrier function, environmental pollution, pathogenesis of Alzheimer's disease and cancer.

3- Lipid oxidation and ferroptosis

The progress made in elucidating the pathogenesis of this important cell death mechanism was reported. The primary contribution of lipid peroxidation in inducing cell death by ferroptosis has been clearly demonstrated. Moreover, the strategic use of this phenomenon in halting the proliferation of cancerous tissues has been discussed.

4. HNE and Oxidised Lipids in Human Pathophysiology - Part Two

New evidence has been provided about the pro-inflammatory effect of oxidised phospholipids and the role of toxic lipid compounds in the pathogenesis of obesity and liver steatosis. Pharmacological

methods to prevent damage from oxidised aldehydes and phospholipids with toxic properties have been deeply analyzed.

It is worth noting the constant presence in the classroom of almost all the members of the meeting, throughout the duration of this. A quite unusual fact, demonstrating the interest generated by the proposed scientific content but also by the lively and valid reports made by skilled and enthusiastic scientists.