

5<sup>th</sup> International Conference on

# Clinical & Experimental Ophthalmology

August 04-06, 2015 Valencia, Spain



***Maria Dolores Pinazo Duran***

*University of Valencia, Spain*

## **Oxidative stress and mitochondrial dysfunction in the pathogenesis of ocular diseases**

Mitochondria control pivotal functions in the cells and tissues, among them the cell cycle, apoptosis, iron/sulfur cluster assembly, generation of reactive oxygen species, calcium homeostasis and biosynthesis of many cellular metabolites. Therefore, mitochondrial changes may induce a wide range of pathological situations such as loss of membrane potential, increase in reactive oxygen species, elevations in oxidized proteins, loss of mitochondrial DNA and/or programmed cell death, all these potentially leading to senescence-associated manifestations. A failure to properly control mitochondrial activity may subsequently convert an essential physiologic process such as the oxidative phosphorylation into a dangerous pathologic disorder regarding the eyes and vision. There is growing knowledge on the role of mitochondrial dysfunction and reactive oxygen species in ocular diseases, including glaucoma and age-related macular degeneration. With the scientific evidence reviewed herein, it can be reached most accurate viewpoint as to how the oxidative stress and mitochondrial failure can interplay to build a solid pathogenic theory in glaucoma and age-related macular degeneration.

## **Biography**

Maria Dolores Pinazo Duran received her medical degree and gained PhD at the University of Valencia (Spain), this latter on lead to the subject of developmental neurodevelopment and toxicology of the visual system, mainly the effects of drug and alcohol exposures. She is the foundational member of the Spanish Society of Developmental Biology and from the Spanish Glial Net. She is active member of various professional societies and reviewer of international journals. She is the founder and managing Director of the Ophthalmology Research Unit "Santiago Grisolia" in Valencia. Currently, she is the General Research Coordinator of the Health Department Valencia- Univ. Hosp. Dr. Peset (Valencia-Spain).

[pinazoduran@yahoo.es](mailto:pinazoduran@yahoo.es)