
Report

Report on International Symposium “Current status of patients with environmental hypersensitivity and future prospects for prevention of its onset in Japan and Taiwan”

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Date, time and place of the event: June 25, 2023, 15:00 -16:45, Kindai University, Higashiosaka, Japan

Organization and planning: This symposium was hosted by the 31st Annual Meeting of the Japanese Society of Clinical Ecology and was planned by the Environmental Sensitivity Subcommittee of Society (Sachiko Hojo, Lin-Lin Huang, Yoshiyuki Kuroiwa, Atsushi Mizukoshi, and Kou Sakabe).

Chairperson: Kou Sakabe and Lin-Lin Huang

I. The purpose of holding this symposium

In the opening remarks, Professor Sachiko Hojo (representative of planner) explained the purpose of this international symposium as follows.

In recent years, there has been a rapid increase in the number of people, who suffer from a health disorder called environmental hypersensitivity. Environmental hypersensitivity is a general term for a health disorder in which a variety of symptoms develop in multiple organs due to trace chemical and physical factors. Typical examples are sick building syndrome, multiple chemical sensitivity, and electromagnetic sensitivity, which are well known to be closely related to allergic diseases. However, the pathogenesis of the disease is not well understood, and effective early diagnosis, treatment, and preventive measures are needed. We believe that the effective way to elucidate the pathogenesis of this disease is for researchers in Japan and abroad to exchange information, share information, and conduct joint research. This international exchange symposium was held as a part of this effort to

discuss the current status and future prospects of diagnosis and treatment of patients with environmental hypersensitivity and allergic diseases in both Japan and Taiwan.

II. The title and short summary of each speaker's presentation

1. Li-Chen Chen: Current status of allergic diseases in Taiwan-a brief narrative from the environmental perspective.

He discussed the causative role of air pollution in the development of allergic diseases, and concluded that several epidemiological and experimental studies indicate that air pollutants play roles in both the initiation and exacerbation of allergic diseases.

2. Shau-Ku Huang: Multi-dimensional investigation of environmental influence on allergic diseases and its mitigation strategy-Taiwan experience.

He discussed a Consortium's effort in establishing clinical, epidemiological and environmental "big data" resources and identifying a panel of environmental risk "chemo-signatures" and bioactive "bio-signatures" in asthma and its phenotypic clusters; also, a major environment-disease causal relationship was proposed, wherein chronic exposure to environmental pollutants mediates redox imbalance and metabolic re-programming, leading to inflammation and tissue remodeling, providing thus a rational basis for achieving precision environmental medicine.

3. Sachiko Hojo: Environmental hypersensitivity in Japan-current status and future prospects from an epidemiological perspective.

She showed the current situation of patients with environmental hypersensitivity in Japan as revealed by a comprehensive analysis of the results of Hojo's own epidemiological survey, and discussed future prospects for the prevention of the onset of environmental hypersensitivity.

4. Kentaro Watai: Elucidating the pathogenesis of environmental hypersensitivity using genetic methods: Genome-wide association study and gut microbiome analysis.

He applied genetic methods to search for mechanism of environmental hypersensitivity and discussed a possible association of single nucleotide polymorphisms and environmental hypersensitivity, after the genome-wide association study. He also reported the results of the gut microbiota indicating dysbiosis and alterations in bacterial functions related to exogenous chemicals.

5. Yoshiyuki Kuroiwa: A neuroscientist's hypothesis of the pathogenesis of environmental hypersensitivity and future prospects.

He proposed both hypothalamic mechanism and mitochondrial mechanism for environmental hypersensitivity, and hypothesized its basic pathology as hypothalamic stress intolerance and fatigue syndrome. He also proposed both hormonal and immune theory, to explain gender differences of environmental hypersensitivity or intolerance.

III. Conclusion

After the five presentations described as above, there was a lively discussion among the speakers and between the speakers and the audience. Finally, Prof. Kou Sakabe, president of the Japanese Society of Clinical Ecology, gave a closing address. We are proud that this international symposium, in which we were involved, contributed to one of the historical milestones in the study of environmental hypersensitivity.

Speaker

Prof. Li-Chen Chen



Prof. Shau-Ku Huang



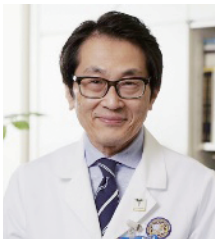
Prof. Sachiko Hojo



Dr. Kentaro Watai



Prof. Yoshiyuki Kuroiwa

Chairperson

Prof. Kou Sakabe



Dr. Lin-Lin Huang



Panel discussion