1716d EFFECTS OF OLFACTORY STIMULUS BY ODOUR ON CEREBRAL BLOOD FLOW AND PERIPHERAL BLOOD OXYGEN LEVELS IN MULTIPLE CHEMICAL SENSITIVITY

[1]K Azuma*, [2]I Uchiyama, [2]M Tanigawa, [3]I Bamba, [4]M Azuma, [5]H Takano, [2]T Yoshikawa, [6]K Sakabe. *[1]Kindai University Faculty of Medicine, Osakasayama, Japan; [2]Louis Pasteur Centre for Medical Research, Kyoto, Japan; [3]Tokyo Gakugei University, Koganei, Japan; [4]Kio University Faculty of Health Sciences, Kitakatsuragi-gun, Japan; [5]Kyoto University, Kyoto, Japan; [6]Tokai University School of Medicine, Isehara, Japan*

10.1136/oemed-2018-ICOHabstracts.815

Introduction Multiple chemical sensitivity (MCS), often called idiopathic environmental intolerance, is a chronic acquired disorder characterised by nonspecific symptoms attributed to exposure to common odorous chemicals. We previously reported significant activations in the prefrontal cortex (PFC) during olfactory stimulation using several different odorants in patients with MCS compared with controls. Previous clinical observations demonstrated differences in oxygen partial pressure in peripheral venous blood between patients with MCS and controls. Our objective is to investigate peripheral blood oxygen levels during olfactory stimulation to characterise patients with MCS.

Methods We investigated changes in the prefrontal area using near-infrared spectroscopic (NIRS) imaging and those in peripheral arterial blood oxygen saturation (SpO_2) using a pulse oximeter during olfactory stimulation with odorants (γ-undecalactone) at three concentrations (zero, odour recognition threshold, and normal perceived odour level) in 11 patients with MCS and 10 controls. We also examined their oxygen partial pressures in peripheral venous blood at normal condition before the test.

Results We observed significant activations in the PFC during olfactory stimulation in patients with MCS. The SpO_2 in peripheral arterial blood in patients with MCS remained higher than that in controls during olfactory stimulation tests. The SpO_2 remarkably decreased in patients with MCS compared with that in controls during olfactory stimulus at normal perceived odour level and the recovery of the SpO_2 after the stimulus was delayed in these patients. No significant differences in oxygen partial pressures of peripheral venous blood were observed.

Conclusion Patients with MCS exhibited stronger brain responses to odours at normally perceived levels. Changes in SpO_2 in the peripheral arterial blood suggest that MCS might result in poor oxygen supply to the peripheral tissues or inadequately control the oxygen supply.

1716e MOBILE PHONE USE AND ONSET OF SYMPTOMS. AN UPDATE OF THE EVIDENCE FROM PROSPECTIVE COHORT STUDIES

L Hillert. *Institute of Environmental Medicine, Karolinska Institutet, Stockholm, Sweden*

10.1136/oemed-2018-ICOHabstracts.816

Parallel to the rapid increase in mobile phone use worldwide concerns have been raised about various health effects. Acute symptoms have by some individuals been reported to be triggered when holding the phone to the head during calls or being close to a base station for mobile telephony. Symptoms vary, but headache, fatigue and difficulties concentrating are among the most commonly reported. Exposure to radiofrequency fields have been proposed as the cause of the symptoms. Double blind provocation studies have however failed to provide support for such a causal link. In spite of this, some people are still convinced that their ill health is caused by exposure to radiofrequency fields from mobile phones. It has also been suggested that a greater number of people than those who report experiencing these reactions to radiofrequency fields might be affected without being aware of the triggering factor. In theory, long term effects after repeated frequent exposure to radiofrequency fields from mobile phones may exist regardless of whether acute effects exists or not. The first studies on a possible relation between mobile phone use and symptoms in the general population were cross-sectional studies. This study design gives little information on possible causal relationship and suffers from a risk of reverse causality as well as a nocebo effect. Lately however, a number of prospective cohort studies have been published. This presentation will provide an update of the knowledge on mobile phone use and the onset of symptoms from these studies.

1716f ENVIRONMENTAL INTOLERANCE – A CLINICAL PERSPECTIVE

[1,2]M Tondel. *[1]Occupational and Environmental Medicine, Uppsala University Hospital, Uppsala, Sweden; [2]Occupational and Environmental Medicine, Department of Medical Sciences, Uppsala University, Uppsala, Sweden*

10.1136/oemed-2018-ICOHabstracts.817

Environmental intolerance is relatively prevalent in the general population, recognised by the patients as highly variable symptoms attributed to different perceived harmful exposures such as indoor environment, chemicals, odours, electromagnetic fields and noise. It is not uncommon with progression from a few triggers and symptoms to a multifaceted complex of symptoms triggered by multiple factors. Typically, the symptoms occur at very low exposure levels, below thresholds of acute toxicologic effects and at levels tolerated by a large majority of the population. To understand the background of environmental intolerance, a multi-professional approach is needed with knowledge of allergy, public health, toxicology, physics, chemistry, psychiatry and psychology. In Uppsala we have developed a model where the patients have individual consultations with a medical doctor, an industrial hygienist and a psychologist, respectively. The overall aim is a thorough evaluation of symptoms, exposure and temporal relationship to rule out a medical disease aiming at curative treatment. A well-defined disease is only established in a minority of the cases. Instead, a holistic approach is needed including analysing a range of aspects that may contribute to the condition. The attitude towards the patient, in the professional team, is characterised by active listening, seriousness, confidence building and sufficient time for the patient to describe symptoms and triggers. The final assessment of the patient is made by the physician after discussing the results of the examinations made by other members of the team. By a respectful response aiming for a trustful relationship a discussion can then continue with the patient giving objective information, based on scientific state of the art, related to environmental intolerance. An individual treatment plan includes, if necessary, medical treatment and cognitive behavioural therapy to encourage the