ABSTRACT BOOK ABSTRACTS



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CONTACT DERMATITIS AND OCCUPATIONAL DERMATOSES

STUDY OF THE ASSOCIATION OF HUMAN MICROBIOME WITH NICKEL ALLERGIES, OVERWEIGHT AND METABOLIC SYNDROME

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Introduction: Intestinal microbiota presents over 100 trillion microorganisms. Human gut and microbiota established a mutual relationship: the intestine provides a protective environment for bacterial proliferation, while the microbiota maintain gut homeostasis. Nickel exposure can present as Allergic Contact Dermatitis (ACD) or Systemic Contact Dermatitis (SCD). SCD follows nickel ingestion and a correlation between nickel allergy, obesity and gut microbes has recently been described.

Objective: The aim of study is a cross-sectional study to evaluate the presence of Nickelresistant bacteria in the human population and their association with nickel allergy, overweight and metabolic syndrome.

Materials and Methods: We collected stool samples from 9 patients with a nickel allergy and normal body mass index (BMI <25) and 8 overweight nickel allergic subjects (BMI >25). Stool samples were studied using a culturomics-approach with modifications (Lusi et al., 2017). Stool cultures were supplemented with increasing concentrations of nickel sulphate (NiSO4·6H2O) from 0.1mM up to 50 mM, in both aerobic and anaerobic conditions. Stool cultures not supplemented with nickel were used as controls in each round of experiments. Bacterial cultures grown in the presence of nickel were seeded onto agar plates. Bacterial identification was made by MALDI-TOF technology.

Results: Eight patients out of nine normal subjects (88.8%) and 5 out of 8 overweight subjects (63%), showed gut microorganism able to grow at 10mM NiSO4. No bacterial growth was detected at 32 or 50mM NiSO4 in any of the normal group. On the contrary, 3 (37%) out of overweight subjects had gut microbes able to grow at higher nickel











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concentration (32 and 50 mM).

Conclusion: The study of microbiota composition in our cohort of patients suggests that overweight subjects with a nickel allergy harbor gut microbes highly resistant to nickel and an increased presence of Lactobacillales compared to the normal subjects.





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