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THE ATYPICAL DIET OF CHILDREN AFFECTED BY ORAL DISORDERS IS ASSOCIATED TO SPECIFIC SALIVARY PATTERNS

Martine MORZEL[1*], Eric NEYRAUD[1], Sophie NICKLAUS[1], Florian NICOD[1], Caroline TRUNTZER[2], Patrick DUCOROY[2], Ségolène GAILLARD[3], Noël PERETTI[4] and Gilles FERON[1]

1 Centre des Sciences du Goût et de l'Alimentation, UMR6265 CNRS, UMR1324 INRA, Université de Bourgogne, 21000 Dijon, France, 2 : CLIPP (Clinical and Innovation Proteomic Platform), IFR100 Santé-STIC, CHU de Dijon, 21000 Dijon, France 3 : INSERM, CIC 1407, Hospices Civils de Lyon, CNRS, UMR5558, Université de Lyon, F-69000, Lyon, France, 4 : Université de Lyon, Claude Bernard Lyon 1, Faculté de Médecine Lyon-Est, INSERM U1060, CarMeN laboratory, Hospices Civils de Lyon, Lyon, F-69003 France.

Some severe digestive diseases occurring in the neonatal period require that children are fed via the enteral or parenteral routes for prolonged periods. By-pass of the oral cavity during the early stages of development of the food oral processing capacities results in some cases in so-called oral disorders (OD). Oral disorders may persist for years after healing of the causal disease, and are expressed for example by difficulties in chewing and swallowing and by high food selectivity. The present study aimed at comparing the salivary biological signatures in two groups of children, OD patients (n=21) or healthy controls (n=23), using a variety of analytical methods: targeted biochemical measurements (enzymatic activities, total antioxidant status…) , ^{1}H NMR, MALDI-TOF and SELDI-TOF profiling, and 2D electrophoresis. Most analyses were performed longitudinally at three sampling times over one year. In addition, the consumption frequency and liking of food groups was evaluated by means of a questionnaire designed specifically for the study.

The two groups of children could be discriminated very clearly from the point of view of their food choices. In particular, OD patients consumed less frequently and liked less desserts, fruit and cereals products. Compared to saliva of healthy controls, saliva of OD patients was characterized by a lower total antioxidant status and a lower abundance of cystatins (SN, D, B) and gluthathione S-transferase P. It was also possible to discriminate the two groups by the three sets of spectral data (^{1}H NMR, MALDI-TOF and SELDI-TOF). The most discriminant SELDI peak (m/z 14306) was in agreement with the under-expression of cystatin SN in the OD group. Profiling methods provided additional information, for example that lactate and alanine were over-expressed in saliva of OD patients. To conclude, although the OD group was quite heterogeneous in terms of age/developmental stage and initial pathology, some specific salivary features were identified in OD patients. The atypical diet recorded in such patients may explain in part these specificities.

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