

Individuality of the composition of the human microbiota

Sirs,

We read with interest the article by Natalello *et al.* (1) where it has been found a great association between immunological diseases and intestinal microbiota, performing an analysis of the faecal microbiota in a cohort of patients with systemic sclerosis and paired healthy controls (HC), to obtain some hints about a possible role of dysbiosis in the onset, progression, and severity of the disease. However, they do not take into account the individuality of the microbiota in each person, being different by multiple factors, including race, sex, culture, diet, among others.

Systemic sclerosis is a chronic disease, categorised as rare and multisystemic, with high mortality within autoimmune diseases characterised by cutaneous fibrosis and vasculopathy (2, 9). In this context, it is intended to associate the quantitative and qualitative variation in bacterial populations with warning signs of pathological states in autoimmune diseases, specifically in systemic sclerosis. We suggest considering the individuality of the composition of the intestinal microbiota since it is known that each human being has a unique and specific profile capable of meeting their needs (3). In a study that evaluates the composition of the microbiota in individuals who lived in strictly controlled environments (astronauts) there is evidence that even in the same systems of intake, food safety, age, and other habits capable of modifying the microbiota, it maintains compositional traits particular to each individual (3, 4). Throughout life we find various factors that modify the microbiota early, as if it were a full-term child, born vaginally, and fed with healthy and balanced breast

milk, as the basis for the development of intestinal microbiota. Later, among them are age, the use of antibiotics, diet, and comorbidities (such as diabetes mellitus, overweight, autoimmune diseases, etc.) (5, 6). We must mention that with the first solid foods the biggest changes of microbiota occur (3).

In animal models, it has been shown over time that the intestinal microbiota influences the capacity to modulate energy homeostasis, adiposity, and inflammation in the host, this last characteristic is what interests us in autoimmune diseases (7). We know that the microbiota contributes to several innate and acquired immune functions, as in multiple sclerosis, where it influences the prevention, initiation, and treatment of the disease, in terms of its immune response (8).

The microbiota is an excellent way to reach an ideal treatment and a better prognosis for autoimmune diseases. However, we must take into account the factors already mentioned. Therefore, we can conclude that to carry out a more complete study, a bigger number of participants is needed and with more diverse physical, racial, and cultural characteristics so that it has a greater impact and high applicability.

E. FERNÁNDEZ-ESTUPIÑÁN, *Med. Student*
T. GIRALDO-HUERTA, *Med. Student*
A.C. GOMEZ, *Biotechol. Eng.*

*Professional School of Human Medicine,
Universidad Privada San Juan Bautista,
Lima, Peru.*

Please address correspondence to:

*Andrea C. Gomez,
Escuela de Medicina,
Universidad Privada San Juan Bautista,
Sede Chorrillos, Lima, Peru
E-mail: andrea.gomez@upsjb.edu.pe*

Competing interests: none declared.

Clin Exp Rheumatol 2021; 39 (Suppl. 128): S33.

*© Copyright CLINICAL AND
EXPERIMENTAL RHEUMATOLOGY 2021.*

References

1. NATALELLO G, BOSELLO SL, PARONI STERBINI F *et al.*: Gut microbiota analysis in systemic sclerosis according to disease characteristics and nutritional status. *Clin Exp Rheumatol* 2020; 38 (Suppl. 125): S73-84.
2. GRAÑA D, VARGAS A, BÉREZ A, GOÑI M, DANZA A: Esclerosis sistémica: forma de presentación y manejo terapéutico. Experiencia de un grupo de trabajo en Enfermedades Autoinmunes Sistémicas. 2018; 42: 15-22.
3. RINNINELLA E, RAOUL P, CINTONI M *et al.*: What is the healthy gut microbiota composition? A changing ecosystem across age, environment, diet, and diseases. *Microorganisms* 2019; 7: 14.
4. TURRONI S, RAMPPELLI S, BIAGI E *et al.*: Temporal dynamics of the gut microbiota in people sharing a confined environment, a 520-day ground-based space simulation, MARS500. *Microbiome* 2017; 5: 1-11.
5. SENGHOR B, SOKHNA C, RUIMY R, LAGIER JC: Gut microbiota diversity according to dietary habits and geographical provenance. *Hum Microbiome J* 2018; 7-8: 1-9.
6. ESQUIVEL FLORES MG: Microbiota intestinal: el universo que nos habita. *Cuad Nutr* 2017; 40: 107-14.
7. INTESTINAL M, OBESIDAD SY: Revista Salud Pública y Nutrición, 2017.
8. CASTILLO-ÁLVAREZ F, MARZO-SOLA ME: Papel de la microbiota intestinal en el desarrollo de la esclerosis múltiple. *Neurología* 2017; 32: 175-84.
9. LIBE ASPE U, GONZÁLES HERMOSA M, GARDEAZABAL GARCIA J: Esclerodermia. *El-servier España*, 2010.