

# Editorial

## Humans and microbiota: an unbreakable bond

F. Franceschi<sup>1</sup>, H. Tilg<sup>2</sup>, F. Megraud<sup>3</sup>, A. Gasbarrini<sup>4</sup>

<sup>1</sup>Emergency Medicine, Fondazione Policlinico Universitario A. Gemelli IRCCS, Università Cattolica del Sacro Cuore, Rome, Italy

<sup>2</sup>Department of Internal Medicine I, Gastroenterology, Hepatology, Metabolism & Endocrinology, Medical University Innsbruck, Innsbruck, Austria

<sup>3</sup>Bacteriology Laboratory, National Reference Center for Helicobacters, CHU de Bordeaux, Bordeaux, France

<sup>4</sup>Medicine and Gastroenterology, Fondazione Policlinico Universitario A. Gemelli IRCCS, Università Cattolica del Sacro Cuore, Rome, Italy

Corresponding Author: Francesco Franceschi, MD; e-mail: francesco.franceschi@unicatt.it

The history of microbes in humans dates back to the beginning of time; however, the first visual demonstration of a microorganism happened only in 1674. Antony Van Leeuwenhoek submitted his observations obtained with an optical microscope which he made himself, to the Royal Society of London and it was confirmed by Robert Hooke<sup>1</sup>. After a long period, other researchers especially Louis Pasteur and Robert Koch, showed the existence of different microorganisms, initially distinguished only by shape<sup>1,2</sup>. What differentiates modern from old microbiology is very clear: in the past, microbes were only studied in relation to specific diseases, differently from our current view<sup>2</sup>. In fact, nobody at that time would have even imagined that microorganisms are crucial for our survival. Elie Metchnikoff, in the early 20<sup>th</sup> century, realized that Bulgarian people, eating fermented milk, exhibited a higher life expectancy<sup>3</sup>. This is just how we moved from the single germ theory and Koch's postulates to the multiple-germ model, in which eubiosis or dysbiosis may correspond to health or disease.

Why do European Helicobacter and Microbiota Study Group (EHMSG) launch a new journal on microbiota in 2019? Nowadays, knowledge about clinical microbiology has once again become mandatory for modern clinicians. Surely microbiota is one of the most fascinating and revolutionary issues of this century, as demonstrated by the number of studies published worldwide<sup>4,5</sup>. It is remarkable to understand that humans and microbes need each other to survive. While humans ensure survival to many microbial species otherwise extinguished, the same microorganisms trigger health or disease to the host<sup>5,6</sup>. Microbes make human being becoming a perfect machine, by integrating their genome to our and joining in many vital functions otherwise missing. Today we have much information about the action of bacteria and yeasts but a scarce knowledge concerning viruses and protozoa<sup>7</sup>. Nevertheless, what we surely know is that microbiota is a real old-new organ and its knowledge has changed our current view on the pathogenesis of many GI and non-GI conditions, including metabolic syndrome and all its related consequences<sup>8</sup>. Moreover, realizing that some diseases, such as Inflammatory Bowel Disease may be transferred among animals, simply by relocating GUT microbiota from a diseased mouse to a healthy one, has completely transformed our view about transmissible and non-transmissible diseases<sup>9</sup>. This is what we call the "microbiota revolution", a whole change in our understanding of pathogenesis, prevention and treatment of many GI and non-GI conditions. A revolution needing to be strongly supported by the whole scientific community and this journal is one of the EHMSG<sup>10</sup> responses to this challenge.

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