

Introduction

The Covid-19 pandemic infected more than 124 million people worldwide. The development of treatments and vaccines is of actual interest but it is also necessary to assess the sequelae that the virus has caused.

Objectives

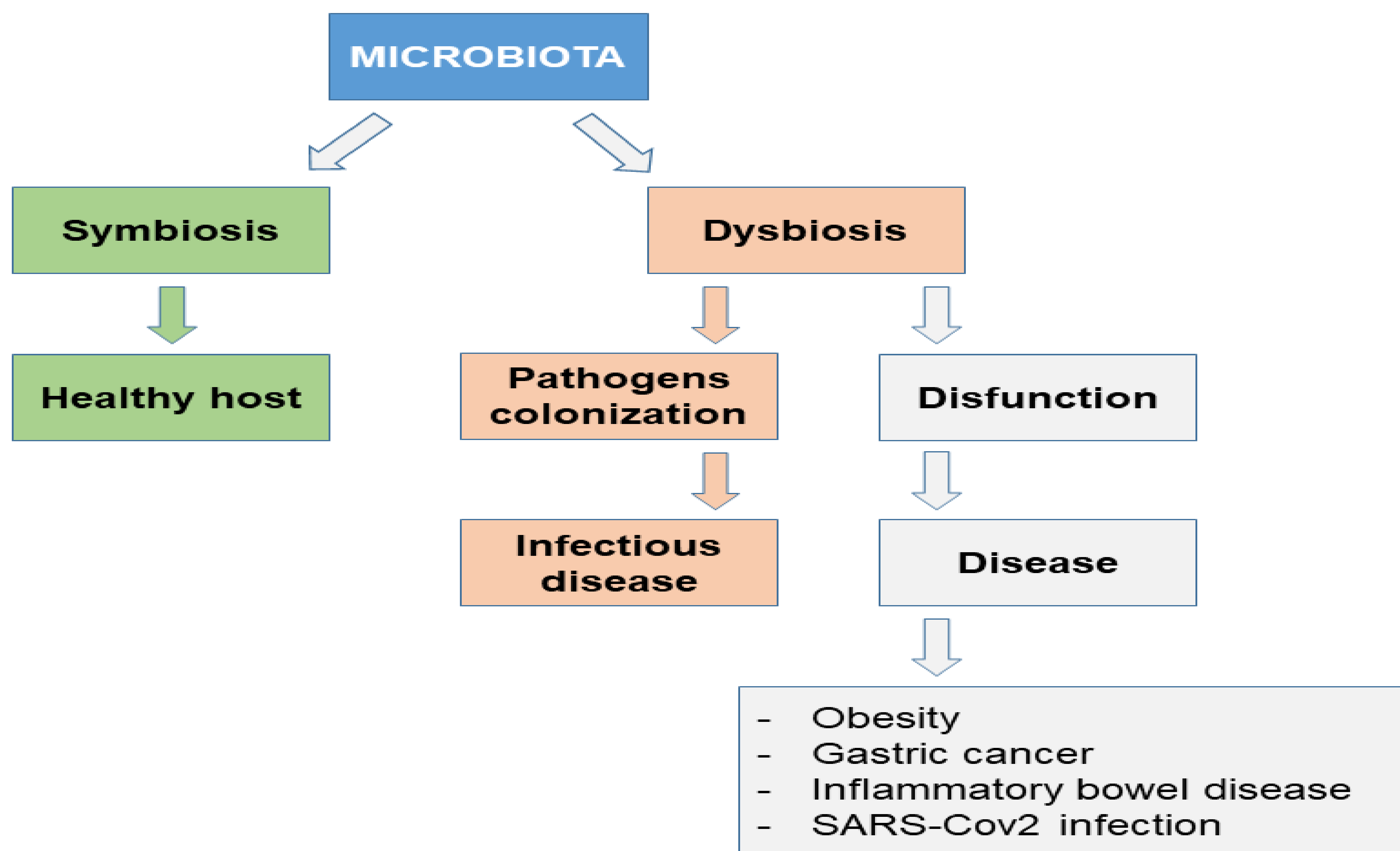
This work aims to study the importance of the relationship between SARS-Cov2 infection and microbiota dysbiosis in cancer patients.

Methods

A revision of the literature about microbiota, SARS-Cov2, modulation factors, precision medicine, cancer treatment, etc., was made using the main databases, pubmed and scopus.

Results

Recent studies report that some of the most important gastrointestinal symptoms (diarrhea, vomiting, abdominal pain, or anorexia) can be caused by Covid-19 infection because this virus has the ability to infect intestinal cells and by this reason it can cause changes in the intestinal microbiota. The entry of SARS-Cov2 into intestinal cells results in a reduction in the concentration of angiotensin-converting enzyme 2 (ACE2). It is the main receptor for viruses in the SARS-Cov family and directly influences inflammation processes. ACE2 also acts as a cofactor of the amino acid transporter BOAT1. The BOAT1/ACE2 complex acts as a regulator of the composition and function of the gut microbiota. A malfunction of this complex leads to dysbiosis and therefore triggers a series of immune responses that directly affect the organism. In addition, elevated levels of plasma serotonin and fecal calprotectin have been detected in patients with diarrhea, indicating that viral infections have caused systemic inflammation of the gastrointestinal tract. Inflammatory cytokines are associated with an elevated concentration of serotonin and fecal calprotectin. This finding supports the evidence of gastrointestinal (GI) inflammation. Recent studies performed by some authors report that there is a significant difference between the microbiota of healthy individuals and individuals who have recovered from Covid-19. Stool samples, analyzed by 16S RNA sequencing, showed significant differences in the gut microbiota of the individuals. The bacterium living in the gastrointestinal tract of patients recovered from Covid-19 could be divided into two large groups: (i) opportunistic pathogenic microorganisms such as *Aspergillus niger*; and (ii) autochthonous microorganisms, mainly Actinobacteria (in a great decrease concentration). The results described above show that SARS-Cov2 not only affects the respiratory tract, but also it can produce an imbalance of the gut microbiota with its corresponding effects. In addition, several studies have also shown that this process of dysbiosis can be non-reversible so it seems essential to constantly monitor the microbiota of patients recovered from Covid-19. However, the pathological mechanism linking these gastrointestinal symptoms to coronavirus infection remains difficult to understand.



UNIVERSIDAD DE MÁLAGA



Conclusions

SARS-Cov2 can produce an imbalance in the diversity of microbiota leading to different symptoms and affecting the health and response of cancer patients to treatment. Therefore, it is important to further investigate in this field because various severe gastrointestinal diseases could be prevented and avoided.

THE RELATIONSHIP BETWEEN SARS-Cov2 INFECTION AND MICROBIOTA IS OF SPECIAL INTEREST IN CANCER PATIENTS