Can bacteria in the gut travel to the bloodstream of IBD patients and how can we detect them?

More than 3.5 million people in the world are suffering from Inflammatory bowel disease (IBD), resulting in a high burden to societies. The intestine barriers of IBD patients are weakened due to inflammation. As a result, bacteria in the gut can travel out to the blood circulating system (translocation) and possibly lead to a life-threatening disease. This study aimed to test different methods to find microbial translocation into the blood.

IBD is a broad term describing chronic and relapsing inflammatory bowel disorders. IBD includes Crohn’s disease (CD) and ulcerative colitis (UC). IBD is a global disease and its causes are unknown. As many people are suffering from IBD, it is important to study IBD to prevent the disease and treat IBD patients. This study found that some bacteria in the blood such as Lactobacillus, Micrococcus, Staphylococcus, Bacillus, and Dioszegia were able to grow on media. Even though, for example, Lactobacillus is considered as beneficial bacteria and is often used as a probiotic, the presence of these alive bacteria in the blood of IBD patients can be dangerous. It is because they can stimulate inflammation and lead to sepsis and/or abscess. The number of bacterial DNA copies in the blood of the IBD patients were measured. It was in the range of $5.90 \times 10^2 \sim 1.75 \times 10^4$ copies/μl and the mean was $3.91 \times 10^3$ copies/μl (SD=3.017 × 10^3). The number of bacterial DNA was significantly correlated with inflammation markers such as CRP (p=0.00255) and albumin(p=0.0158), and hemoglobin (p=0.0257). In other words, the more bacterial DNA in the blood, the higher inflammation level in the body.