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Abstract (oral session)

The composition of intestinal microbiota is a risk factor for chemotherapy-induced diarrhoea in bone marrow transplantation recipients

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Objective: Chemotherapy-induced intestinal mucositis may be complicated by chemotherapy-induced diarrhea (CID). The role of the intestinal microbiota in the pathophysiology of chemotherapy-induced diarrhea (CID) remains poorly understood. The aim of our study was to determine if the composition of the intestinal microbiota after antineoplastic chemotherapy is a risk factor for CID. Methods: Eight patients with Non-Hodgkin lymphoma were included. All of them underwent one identical course of BMT conditioning chemotherapy from Day 1 to Day 6. Fecal samples were collected on Day 7 and analysed using high throughput pyrosequencing spanning the V5-V6 hypervariable regions of the 16S rRNA gene. CID was considered in patients with diarrhea before Day 15. Patients did not received broad spectrum antibiotics before the onset of the diarrhea. Results: Three patients developed a CID on Day 10+/-1, and 5 did not. We observed no differences in taxonomic richness (Chao1 index at the OTU cut-off 0.03, p=0.88) and diversity (nonparametric Shannon index at the OTU cut-off 0.03, p=0.30) between patients who develop CID and those who did not. Fecal samples analysis at the phylum level showed that the 3 patients who developed CID had a lower amount of Proteobacteria (8.7%+/-5.4 versus 30.7%+/-1.8, p=0.03) and a higher amount of Bacteroidetes (40.7%+/-1.2 versus 69.4%+/-2.1, p=0.02) than the 5 others. Fecal samples analysis at the genus level showed that the 3 patients who developed CID had a higher amount of Bacteroides (p=0.02) than the 5 others. Conclusions: In patients undergoing BMT conditioning chemotherapy, we showed differences in the intestinal microbiota distribution between patients who developed subsequent CID and those who did not. CID should be predictable as intestinal microbiota changes preceded CID.