Effect of FMT on blood serum *N*-glycome in patients with fulminant Clostridium difficile infection

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Clostridium difficile infection (CDI) mainly occurs in hospital environment. [1] Patients with CDI in general have a good response to antibiotics therapy, but a subset of patients develop antibiotic-refractory severe or fulminant CDI (SFCDI) for witch a different therapeutic approach is necessary.[2] An effective treatment for SFCDI is fecal microbiota transplantation (FMT) from healthy donors. [3] From the studies it is apparent that gut homeostasis is reconstituted after FMT, but the effect of the FMT on metabolic state of a person is yet unknown. Therefore, in this study we aimed to elucidate the effect of FMT in SFCDI patients on blood serum N-glycome as well on blood serum isolated immunoglobulin G (IgG) N-glycome. The study enrolled four patients longitudinally followed in five time points. In three patients the FMT procedure was successful, while one patient was non-responsive. Temporal changes in blood serum and IgG N-glycome were observed after a successful FMT procedure. Specifically, we detected higher relative abundance of monosialylated and digalactosylated N-glycans in blood serum following successful FMT. Furthermore, the non-responsive patient has higher abundancies of circulating IgG subclass 4 with agalactosylated, bisected and core-fucosylated N-glycans. These findings suggest that changes in gut microbiome have an impact on the metabolic state of a person. However, no broad generalisation can be drawn due to the small sample size. Therefore, a replication study with a larger number of patients is required.

Bibliographic references:
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