

Functional Medicine Approach to Care Improves Quality of Life and Blood Alcohol Levels in a Patient with Auto brewery Syndrome

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Background

Auto brewery syndrome, or gut fermentation syndrome (GFS), is a rare condition characterized by elevated blood alcohol concentration (BAC) in the absence of alcohol consumption. Treatment traditionally involves antifungals and a low-carb diet which are often ineffective. In this case, we describe such a patient who failed traditional therapy, was unable to complete activities of daily living due to high BAC, and responded well to a functional medicine approach to care with sustained improvement in BAC.

Case Description

In 7/2020, a 58-year-old man with T2D, obesity, HTN, and gout developed recurrent episodes of dysarthria, behavioral changes, and somnolence. On multiple occasions in the ER, his BAC level was found to be elevated. The patient and family denied alcohol (EtOH) use. He was ultimately diagnosed with GFS. He self-initiated a strict low-carb diet with initial success in controlling his BAC from 11/2020 to 12/2020. From 10/2020 to 10/2021, he underwent multiple courses of antifungal medications (nystatin, fluconazole, micafungin, and oral amphotericin). The longest period of remission (BAC 0) was 41 days while on micafungin. After 41 days on micafungin and a restricted diet, his BAC increased. Over this time, he lost 80 lbs.

Case Description (cont.)

In 11/2021, he established care with a functional medicine GI provider and dietitian. Stool metabolomics showed no obvious abnormalities. The 5 R protocol (remove, replace, repair, reinoculate, rebalance) was introduced. He started with an aggressive bowel regimen with prucalopride and lactulose. He then started 15 days of high-potency *Bacillus subtilis* probiotic, followed by a transition to a more diverse probiotic. He added daily intake of a medical food to his restricted diet. New foods were then introduced, one at a time, in the evening, with subsequent monitoring of BAC. In 2/2022, he started Undecylenic acid (10-Undecenoic Acid) as fatty acid support. Lifestyle modifications were added to emphasize more exercise, daily outdoor walks, optimal sleep, and decreasing stress. He did well until BAC levels spiked in 3/2022 due to consumption of alcohol, triggered by cravings that developed when the gut production of alcohol decreased. After EtOH cessation, BAC levels have remained undetectable for 60+ days, with continued diet modifications and supplements.

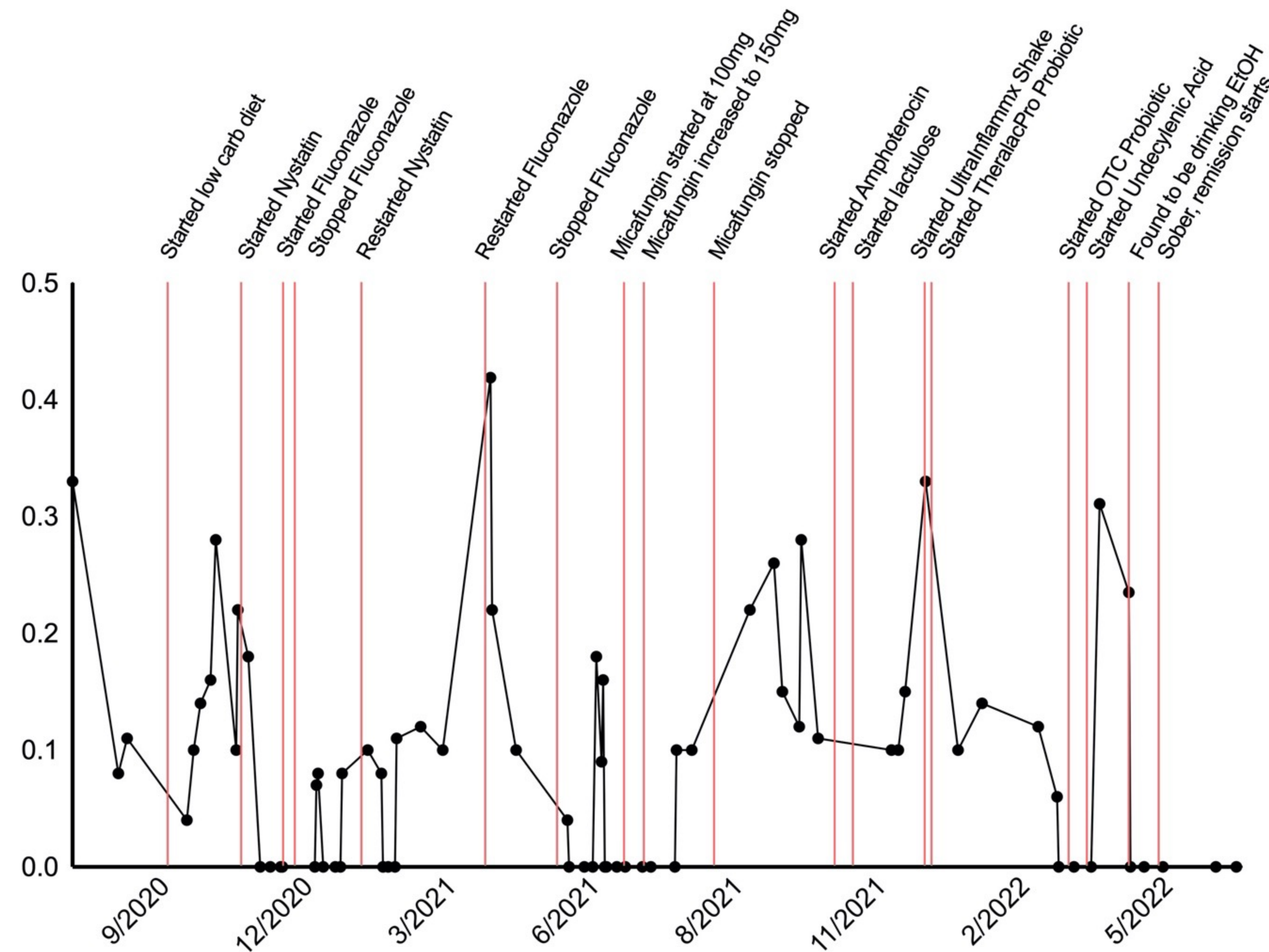


Figure 1. BAC levels continued to spike despite medical therapy and have sustained improvement with functional medicine care.

Discussion

GFS is difficult to treat with minimal traditional therapies. This case is a patient with GFS that failed all medical options and is now thriving after a functional medicine approach to care.