Nutritional Intervention to Reduce Alcohol Consumption

Summary

Although the state of the art treatments for Alcohol Use Disorder (AUD) are widely implemented in Switzerland, there is still a strong need to improve treatment outcomes and to evaluate alternative treatment options. Besides promising new add-on interventions to evidence-based effective treatments such as alcohol-specific cognitive bias modification or transcranial magnetic stimulation, the Ketogenic Diet (KD) is another brand new and hardly examined approach in AUD patients that could help to reduce alcohol consumption or even achieve abstinence. There is recent evidence from animal and human studies suggesting that KD may be effective: One study revealed that heavy drinkers who attended a KD had less withdrawal symptoms and craving within treatment compared to the control group. Another study found that ketone supplements dampened reactivity to alcohol in healthy humans. An animal study found that rodents with KD that had been trained to self-administer alcohol considerably decreased alcohol intake. However, before further conclusions about efficacy and effectiveness of KD for routine AUD treatment can be drawn, more research is needed. First, it is necessary to test the feasibility of KD in AUD patients in terms of adherence and of monitoring potential side effects of KD in this patient population prone to nutritional deficits. In a second step, if feasibility has been proven, potential positive effects of KD on drinking alcohol as primary outcomes should be examined in experimental studies.

We will perform a pilot study that aims at testing randomization and feasibility of implementing a modified KD in patients undergoing standard alcohol withdrawal treatment. For this purpose, we will implement and evaluate a standardized nutritional intervention consisting of psychoeducational E-learning material and interprofessional consultations by clinical dieticians and medical professionals. Patients in the control group will be randomized in an AUD as usual treatment with an additional optional nutritional consultation.

As a primary outcome, we will measure the adherence of the patients to the modified KD during the study period by assessing regular ketone levels and completeness of meal plans. As secondary outcome, alcohol consumption will be measured by the Timeline Follow-Back method in both the KD group and the control group. Further, we will assess the patient's nutritional status (e.g., risk of malnutrition), nutritional problems (e.g., gastrointestinal problems) and eating behavior (e.g., diet quality) as potential control variables and their association with KD adherence. Safety monitoring of KD during the study period will be done by evaluation of biochemical parameters such as liver parameters, vitamins and electrolytes. All outcomes will be monitored during the inpatient and continuing outpatient treatment. As the process of randomization within nutritional interventions implies several challenges (e.g., motivational aspects), we will test the feasibility of randomization as a secondary methodological outcome. A multiprofessional team will conduct the trial at the addiction treatment center of the University Hospital of Psychiatry and Psychotherapy (UHPP) Bern.

To our knowledge, our intended pilot study is the first trial worldwide to investigate modified KDs feasibility and its potential effects on drinking outcomes in AUD treatment. If the intervention is safe and if adherence as well as randomization are feasible, the modified KD as an add-on to AUD as-usual treatment will be examined in more sophisticated studies, (e.g. multicenter randomized controlled trials) by our team. Results will be disseminated at international addiction research conferences as well as in scientific publications.