

Electronic Monitoring of Oral Nutrition System (EMONS)

Its impact on adherence and mortality

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Description of the initiative

- In Slovakia, liver cirrhosis (ACLD) is No.1 leading cause of death in 35-55 y/o people. Malnutrition & sarcopenia is highly prevalent specific complication of ACLD with considerable impact on mortality; therefore, it became important therapeutic target. However, to provide sufficient energy & substrates, and late evening meal is unmet need.
- In our Registry study of outpatients once hospitalized with ACLD (primary cohort), we have found considerably low adherence rate to oral nutritional supplements (ONS); and its independent association with mortality.
- Objectives and scope. To define causes of nonadherence to ONS and to confirm in the prospective manner the association between ONS uptake and mortality.

Planned activities & deliverables

- **Outline the steps to be taken.** We will organize the prospective observational registry study (validation cohort to the abovementioned study). Included will be all the new registrations to the Registry i.e. consecutive patients admitted with ACLD to the liver unit with liver transplant program. We will enrich the existing Registry dataset of the additional anthropometric, laboratory, CT, and frailty measurements of malnutrition & sarcopenia, as well as of the instruments to better understand barriers to the adherence to ONS.
- **What are the concrete deliverables of the project?** The novelty of the project lies in its testing of the newly developed EMONS specially designed for measuring the adherence to ONS. It will monitor the number of openings of the ONS bottles, and the specific times – to determine the night-time and overall fasting time. The main potential effect will be twofold: to test the new EMONS as the diagnostic and stimulating tool (to the best of our knowledge, up to now there are no studies on electronic monitoring of ONS uptake); and to confirm the cause-and-the effect type of association between adherence to ONS and survival of patients with ACLD.
- **What achievements are possible in the next 12 and 24 months?** Based on the experience with our previous study, there is realistic expectation to see the applicability of EMONS, and its association with mortality.

Resources & enablers

- **Describe personnel, financial needs:** 5 physicians (LS¹, TK², PM¹, EH¹, SAS¹), 2 study nurses (JV, BS), 3 IT/technicians (MD, AK, LC [Slovak University of Technology]), 1 administrator (VD [FDRH]).
- **Specify how the grant will be spent:** By the Grant resources we would cover the technical and intellectual demands associated with the development of EMONS with central server / data monitoring system, fees to the personnel of the study, and statistical analysis
- **What factors will make it successful?** The acceptance of EMONS by the patients and their families in the outpatient setting

Results/outcomes & expected impact

- **How will the findings be implemented?** EMONS could become the investigational and diagnostic tool for adherence to ONS. If confirmed, direct impact of adherence to ONS on mortality in ACLD would by itself become the argument reinforcing adherence on both the patient and provider sides where the (lack of) knowledge is the main barrier.
- **How will this project advance patient care / contribute to optimal nutritional care?** As above: targeting the barriers to adherence to ONS; reinforcing adherence to ONS by proving its impact on survival; better understanding / targeting the region-specific barriers to adherence.
- **What makes the project innovative?** 1)EMONS. 2)The topic: there is scarcity of data on adherence to ONS in ACLD.
- **Will the project be likely to influence national nutrition policy?** YES
- **Is the project transferable to other settings / countries?** YES