Dietary intake and nutrient status after GLP-1 RA therapy

Insights towards nutritionally adequate diabetes care

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Description of the initiative

- **Background and rationale**

GLP-1 receptor agonists (GLP-1 RAs), such as Ozempic and Victoza, are medications widely used in type 2 diabetes and obesity care. Their appetite-suppressing effects promote weight-loss but may also lead to reductions in essential nutrient intake and malabsorption. The mechanisms of action of GLP-1 RAs extend beyond reduced food intake and nutrient absorption and it is therefore our hypothesis that GLP-1 RA-specific effects, in combination with reduced food intake, may contribute to nutrient deficiencies that could compromise patient health. Preliminary evidence shows also a significant loss of muscle mass for patients losing weight on these treatments. While GLP-1 RAs are transforming diabetes care, no prior research has explored patients' dietary intake or potential nutrient deficiencies after initiation of these medications.

- **Objectives and scope**

This observational study will investigate changes in dietary intake (energy, macronutrients and food groups), blood levels of key micronutrients (vitamins and minerals) and body composition (fat and muscle mass) in people with type 2 diabetes after 6 months on GLP-1 RA therapy. The scope of the study is to generate clinically relevant insights that will support nutritionally adequate, evidence-based care in diabetes care.

- **Planned activities & deliverables**

The project will begin with recruitment and continuous enrollment of participants with type 2 diabetes newly prescribed GLP-1 RA therapy and matched controls without these medications from our diabetes clinic. We aim to recruit 80 participants (40 GLP1-RA and 40 controls). Baseline data collection includes dietary intake data from 4-day food diaries, blood tests of key micronutrients, anthropometrics, and body composition. The follow-up visits include dietary assessment and body composition at 3 and 6 months and blood tests at 6 months. After completed data collection, we will conduct data cleaning, statistical analysis and preparation of results. Of these steps, recruitment and part of follow-up will be achieved in the first 12 months and after 24 months we expect to deliver 1–2 conference abstracts and have prepared one manuscript on dietary intake and nutrient status.

- **Resources & enablers**

Personnel includes the PI, who as a registered dietitian will assess dietary intake, two senior physicians responsible for recruitment and blood tests, and one study nurse for blood sampling, all employed at the Center for Diabetes in Stockholm. The team has extensive experience with clinical and nutritional studies in diabetes, and the clinic provides all required resources (lab, freezers, nutritional software), ensuring study feasibility. The grant will fund part of the dietitian's salary (~20% of time for 2 years, ca 20000€) and the blood tests, materials and indirect costs (ca 20000 €). No other funding is secured yet; we have applied for a Project Grant from Region Stockholm to cover the salaries of the other project members.

Results/outcomes & expected impact

This project will generate detailed data on changes in energy and macronutrient intake, as well as nutrient status (vitamins and minerals) and body composition, in individuals with type 2 diabetes after initiating GLP-1 RA therapy. These findings will inform whether routine dietary assessments and micronutrient monitoring should be integrated into diabetes care when GLP-1 RAs are prescribed. By combining dietary intake data with blood-based nutrient markers, the project will identify potential nutritional risks early and provide evidence for targeted dietary support. This will contribute to more personalized and nutritionally adequate diabetes care, supporting clinical decision-making and dietitian-led interventions. The results will be relevant for clinical guidelines and have the potential to influence national nutrition recommendations. The design is pragmatic and transferable to other healthcare settings worldwide, where GLP-1 RAs are widely prescribed.

√ **Please tick to confirm the PEN letter of endorsement is attached. Incomplete submissions will not be considered.**

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