

RESEARCH PROJECT
PAULESCU SCHOLARSHIP- 4th EDITION

TITLE: REACTIVE HYPOGLYCEMIA – TOOLS THAT CHARACTERIZE IT BETTER

PERSONAL DATA:

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PROJECT DURATION: 2 years

PROJECT DESIGN:

Background

For more than 20 years reactive hypoglycemia is a controversial medical diagnosis that defined by a meal-induced lowering of blood glucose. It is associated with several other conditions that involve an alteration of insulin secretion like pre-diabetes and diabetes mellitus, hormonal disorders (growth hormone or cortisol deficiency) or gastrointestinal disorders. The remaining patients in which all of these diseases have been excluded are diagnosed with idiopathic reactive hypoglycemia and are frequently being mistaken as having an underlying psychiatric illness. There are no published current guidelines that address to the management of this condition. Initial studies used oral glucose tolerance test (OGTT) and mixed meal tolerance test (MMTT) to investigate the hypoglycemic pattern. With the emergence of the continuous glucose monitoring systems (CGMS), reactive hypoglycemia can now be comprehensively assessed, both in hospital care, as well as in the home setting.

Objectives

We aim to determine which medical tool can be better used for establishing the diagnosis and the clinical importance of reactive hypoglycemia.

Methods

The study will be held at Università Campus Bio-Medico in Rome. We designed an observational prospective study which includes non-diabetic patients (age greater than 18 years) with reactive hypoglycemia that have a BMI between 18 and 35 kg/m². In these patients we will perform an OGTT and MMTT for diagnosis confirmation and evaluate the blood glucose, insulin and C-peptide response at these tests. Additionally, a CGMS (Medtronic®) will be used for a six day period. The information obtained will be analysed using R statistical package (Foundation for Statistical Computing, Vienna, Austria).

Conclusion

We will describe the response of bona fide reactive hypoglycemia patients to OGTT and MMTT and we will correlate the information obtained from these tests with the results of CGMS. We will suggest a modality to integrate the obtained results in the management of reactive hypoglycemia.

References

[1] **Buss RW, Kansal PC, Roddam RF, Pino J, Boshell BR.** Mixed meal tolerance test and reactive hypoglycemia. *Horm Metab Res*, 14(6): 281-3, 1982.

[2] **Hofeldt FD.** Reactive hypoglycemia. *Endocrinol Metab Clin North Am*, 18(1): 185-201, 1989.

[3] **Hogan MJ, Service FJ, Sharbrough FW, Gerich JE.** Oral glucose tolerance test compared with a mixed meal in the diagnosis of reactive hypoglycemia. A caveat on stimulation. *Mayo Clin Proc*, 58(8): 491-6, 1983.

PROJECT COMPLETION

- Presentation of the preliminary results at the 41st National Congress of Romanian Society of Diabetes Nutrition and Metabolic Diseases
- Presentation of the final results at the 42nd National Congress of Romanian Society of Diabetes Nutrition and Metabolic Diseases
- Study publication in an ISI indexed journal