

The GH-Method

A Case Study on the Prediction of A1C Variances Over Seven Periods with Guidelines Using GH-Method: Math-Physical Medicine (No. 348)

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Abbreviations: T2D: type 2 diabetes; HbA1C: hemoglobin A1C; FPG: fasting plasma glucose; PPG: postprandial plasma glucose; MPM: math-physical medicine

1. BACKGROUND

This study delves into the analysis, prediction, and interpretation of hemoglobin A1C (HbA1C) variations in a type 2 diabetes (T2D) patient across seven distinct periods, employing the GH-Method: math-physical medicine (MPM) approach.

2. METHODS

The author harnessed the MPM methodology to scrutinize seven contributing factors of A1C:

- (1) A1C variances due to fasting plasma glucose (FPG);
- (2) FPG variation attributed to body weight changes;
- (3) Influence of colder weather on FPG;
- (4) A1C variances linked to postprandial plasma glucose (PPG);
- (5) PPG variation caused by carbohydrate/sugar intake;
- (6) PPG variance stemming from post-meal physical activity; such as walking exercise;
- (7) Effect of warmer weather on PPG.

3. RESULTS

Drawing from the author's extensive body of work on HbA1C contributions from FPG and PPG, along with predictive models for these

two glucose measures and HbA1C, this case study encompasses eight lab-tested HbA1C values within seven equally spaced periods from April 1, 2017 to December 20, 2019. Detailed analysis is conducted using data related to body weight, carbohydrate/sugar intake, exercise, FPG, PPG, daily glucose, and A1C for the seventh period (September 25, 2019 - December 20, 2019). Step-by-step calculations for deriving and interpreting these A1C variances are also presented.

4. CONCLUSION

This A1C case study concentrated on seven periods over 994 days, encompassing a wealth of meal data totaling 2,982 entries, incorporating certain critical contributors such as carbohydrate/sugar intake, post-meal exercise, and weather conditions. The study attests to a remarkable level of accuracy, achieving 100% precision in calculating and predicting the forthcoming A1C values, thanks to the GH-Method: math-physical medicine (MPM) approach. Once healthcare professionals and T2D patients acquire and comprehend this HbA1C prediction technique, it becomes easier to manage the overall T2D condition. The core objective of this research paper is to empower patients to mitigate further internal organ damage stemming from elevated HbA1C levels while awaiting laboratory test results.