



Sustaining Prevention

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Abstract

The Author suggests the reproduction of a Gastroenterology Unit, 4 or 5 people, similar to that he personally directed for over 30 years. One doctor, MD, one nurse and one dietician, all full time engaged in the Unit. I would add a doctor in Physics or Chemistry to increase the objectivity and operate further statistical analyses on findings. The old Unit produced about 100 international articles, hundreds requests as invited speaker, about hundred awards. Unfortunately, the Unit was suppressed in the year 2000 to give resources to old, established scientists. The Unit is expected to resume the research activity that prof. Ciampolini directed up to the year 2000 and beyond. The cumulated data on excel might be verified, the patients who changed meal pattern and learned Initial Hunger Meal pattern (IHMP) might be invited to show maintenance of the habit changes after the learning in the years before 2000. The scientific working of the Unit should maintain an independent position in the prevention of diabetes development and its milestones: functional disorders, vascular diseases and malignancies. International and National Science will evaluate the achievements year after year.

Keywords: Blood Glucose; Diabetes; Insulin Resistance; Overweight; Fattening; Energy Balance; Energy Intake; Limit in Energy Intake; Hunger; Meal Onset; Energy Availability; Bowel disorders; Malnutrition.

List of Terms and Abbreviations

BG: Blood Glucose, an index of energy availability in blood for the whole body; IH: Initial Hunger consists of gastric pangs or mind or physical weakness: Inedia is the Italian word for this weakness. In sedentary adults and in children, IH corresponds to 76.6 ± 3.7 mg/dL BG. In infancy corresponds to demand before sight of food. IHMP: Initial Hunger Meal Pattern: Energy intake is adjusted to three arousals of IH per day. OGTT: Oral Glucose Tolerance Test; AUC: Area Under Curve of GTT; MBG: The mean of 21 BG measurements before the three main daily meals reported by a week diary. MBG measures the compliance with IHMP, MBG shows changes after training and it is negatively correlated to insulin sensitivity. Below 81.8 mg/dL (Low MBG) MBG indicates a healthy meal pattern in sedentary people. Over 81.8 mg/dL, High MBG is associated with fattening/insulin resistance. NSV: Non-starchy Vegetables, food with lower content than 30 kcal/100 grams.

Introduction

The author directed the Unit of Preventive Gastroenterology from the sixties of previous century up to the year 2000. As third

degree reference center, the Unit received diarrheic infants in the second year of life. Most had a transient functional disease that spontaneously regressed [1,2]. A minority developed malnutrition [3], another minority was diagnosed as Celiac disease [4,5]. At that time, the author, all scientific world as well as the Italian group for the study of Pediatric Gastroenterology had a poor knowledge of diarrhea disease. The interest was toward Celiac disease. Knowledge of diagnosis and treatment of Celiac disease was accurate and effective. Celiac patients were distinguished by signs of malnutrition and subsequently by measuring antigliadin antibodies and also by measuring transglutaminases.

The Unit conceived diarrhea as a consequence of overgrowth and imbalance in the microbiome [5]. Thousands bacterial species grow in human intestine and most do not interact with mucosa. Forty % evoke an IgA response that does not provoke inflammation. A small number, less than hundred species have an immunogenic role on intestinal mucosa and elicit production of antibodies IgM and IgG as well as cellular inflammation. One or two immunogenic species grow excessively [5-9] as a consequence of long per-

manence of nutrients in the bowel. The long permanence follows a meal with excessive energy content or a slowdown of absorption. A slowdown event may coincide with increases in environmental temperature or with a parenteral viral infection. Feeding children was designed in the purpose of least slowdown events of absorption and progression, least bowel bacterial growth and least immune stimulation of mucosa. This strategy suppressed diarrhea relapses [10-12], was successful among patients, and in the scientific world. Past achievements do not require revival but may be used as proved, consolidated techniques to solve other problems by new projects. Insulin resistance and diabetes promote overall aseptic inflammation. These localize mainly in the vascular tree. There are growing expectations from IHMP in the prevention of vascular diseases. Here is the new reasoning: Inflammation implies accelerated turnover of immune and tissue cells that develop differently in time and location from those in the vascular tree and from other tumors [13]. Accelerated turnover means increased DNA formation, increased errors in DNA duplications, increased oncogenic cell production. We were unable at showing a treatment of cancer by IHMP that may be not feasible. We only showed pathogenesis and possibility of prevention. The provided simple evidence and the associate reasoning might convince and orient physician's mind. A physicians' univocal conviction might orient also lay people.

Intervention

The complete strategy consists in diabetes prevention, although single manifestations throughout the entire life are seemingly far from diabetes. These manifestations consist in functional disorders like diarrhea, abdominal pain and headache or backpain. These are not organic diseases and are easily and completely reversible. Vascular obstruction diseases have only partial regression. Attempts at stop malignancies are poor as far as we know. Malignancies follow alterations of DNA that emerge during replications. Increase in DNA and cell replications is produced by inflammations and an overall inflammation is associated with insulin resistance and diabetes. Malignancy prevention through decades and entire life coincides with diabetes prevention. Centers for the treatment of diabetes might be organized to this general prevention.

Diabetes centers and malignancies

Although I promoted the creation of antidiabetic centers, I was excluded from these organizations. I had already intense work-days in Pediatric Gastroenterology. The nature of Italian, medical collaboration is generally competitive. A competition among institutes may be useful for general assistance and health maintenance. Yet

competition inside the institute may be ruinous and this was the situation where I was working. At the moment, this discussion is useless; it may only begin to show the huge difficulty in constructing health and clinical, objective assessments.

The usefulness of the may be obvious. In our strategy, the Unit of antidiabetic prevention should treat reversible disorders like diarrhea, headache, backpain... vascular diseases, malignancy prevention. I.e., the Unit might contrast overall inflammation and excess immune stimulation in all population. The major difficulty in reproducing a useful center is the point of patient recruitment. 20 years of activity interruption on my side may mean complete dismissal of past teachings. The centers do not need to necessarily regrow in Italy. The author is almost incapable of moving from Florence, yet communications by phone or internet may direct and correctly orient enterprises from Florence.

I wonder if all research is made for researchers, to respond to their wish to improve their personal understanding of the world. Current, preformed solutions do not satisfy this wish. A personal finding, a personal insight has also the load of seeing the limits, the cofactors, the alternatives. Research has a big burden. Why condemn yourself to such a burden?

I never have thought to solve an important problem like tumors. Yet the solution for diarrhea in infants is useful also for the biggest human problem. It was like the description of making Science by Leonardo da Vinci in a cave: initially, you see nothing in the dark. Then emerge uncertain figures. These become more definite and others join the firsts. I can now evaluate others' findings. All studies on Nutrition are useful at your mealtime. Without the meaning of energy, of amino acids how would possible to eat? Many other factors revealed to be necessary. The statements begin to contrast each other but only one can be true when two statements are in opposition. Probably, the work of confrontation must increase on further deepening of findings. Complex situations may be afforded, awareness on nursing the ill may reveal as fruitful as knowing the eating in healthy. Scientific work has not to stop although we can be sure of past achievements: we can reasonably decide about our life length [14].

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Conflict of Interests

No conflicts of interest

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