

## Metabolic Correction: Targeted Cost Effective Therapeutic Strategy to Improve Outcomes

Jorge R Miranda-Massari and Michael J Gonzalez\*

University of Puerto Rico, Medical Sciences Campus, School of Public Health, Department of Human Development, Nutrition Program, San Juan PR, USA

\*Corresponding author: Gonzalez MJ, University of Puerto Rico, Medical Sciences Campus, School of Public Health, Department of Human Development, Nutrition Program, San Juan PR, USA, Tel no: 787-759-6719; E-mail: michael.gonzalez5@upr.edu

Received Date: 15 May 2015; Accepted Date: 16 May 2015; Published Date: 20 May 2015

Copyright: © 2015 Gonzalez MJ. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

### Editorial

Metabolic correction is a clinical strategy directed to address the root biochemical cause of disease that can be used with other treatments and has been proposed to be a cost effective alternative that can potentially reduce complications of the natural course of the disease as well as from the adverse drugs reactions and its costs. Metabolic correction is not part of the current medical guideline, but should they?

Current medical guidelines are created by groups of experts that examine the evidence in a given area to determine which therapeutic approaches will give the most benefit to the patient with the least risks and costs. This idea seems appropriate, but a closer look into its results will reveal important flaws that limit treatment success cause many treatment failures.

The standards in the system are designed to evaluate synthetic and relatively toxic substances. These standards require study designs that are very costly and can only be paid when the products are patentable. However, many natural substances, active forms of vitamins and minerals have minimal toxicity and significant clinical benefits, but if no exclusive patents can be obtained, financing large prospective studies required by the medical guidelines are unlikely.

Medical standards often direct recommendations toward symptomatic management of the condition. This is in part because there are limited resources to evaluate each individual in enough detail to pinpoint the specific cause of their particular medical condition. These limited resources will require public health policies to influence the medical guidelines and standards to maximize the cost effectiveness.

An example of incomplete disease management (not treating the cause) is essential (or primary) hypertension which means that there is no identifiable cause for it and it comprises 95% of all hypertensive patients. In the US, 32.5% of adults have a diagnosis of hypertension and only about half have their blood pressure under control. Over 27,000 die yearly in the US of this condition and is a contributing cause in more than 360,000 deaths per year [1,2]. High blood pressure deaths are on the rise [3], in addition, many patients will end up taking medications which are not correcting the root cause of the hypertension and causing side effects and other problems.

Perhaps a more relevant example is the treatment of pain. In the United States, medical guidelines heavily rely in the pharmaceutical industry. Americans constitute about 4.6% of the world's population and consume 80% of the global opiate analgesics that are produced [4]. That strongly suggests a health paradigm with exaggerated emphasis on symptom control and use of medications. Painful diabetic neuropathy guidelines are based on symptom control. Medication can

contribute to nutrient depletion which can create conditions that are unfavorable for nerve tissue repair. There is evidence that indicate that certain nutrients can support and promote tissue repair and achieve clinical improvement in such condition [5].

### Limitations of the Current Guidelines

Disease result of a deterioration of normal physiology that occurs when a particular organism with its unique set of genes is exposed to a certain unfavorable environment. More specifically, health or disease will manifest itself by the interaction of nutrition, lifestyle and the influence of environmental contaminants that ranges from hydrocarbons, heavy metals to EMF radiation and even medication. Therefore in the 21st century, a complete clinical assessment needs medical history, physical examination and comprehensive laboratory testing that should include whole genome sequencing, inflammation, immune testing, nutrient, heavy metals, xenobiotics, nutrient, food intolerance/sensitivities and metabolic panels.

Medical research and education has given us a glimpse on how multiple diseases arise from poor nutrition and a toxic environment and yet the medical guidelines are directed toward using synthetic compounds to alter our response to the conditions in order to treat the symptoms instead of addressing the root cause of the disease. It is important to remember that deficiencies, insufficiencies, allergies, sensitivities, intolerances, toxicities and biotic imbalances can all cause diseases. The therapeutic use of nutrition and scientific supplementation as explained by the concept of Metabolic Correction needs serious consideration by our health system.

The increasing cost of medication and related morbidity and mortality (MM) in ambulatory patients in the USA has been documented in various studies. This cost increased from 76 billion dollars in 1995 to \$177 billion in 2001 [6,7]. At this rate the medication related morbidity and mortality is estimated to surpass 700 billion dollars in 2015. Medication induced morbidity and mortality is also related to its adverse effects. Some of which are an extension of the pharmacologic effect, such as allergies, some are related to the direct toxic effects of the drug or its metabolites and some of are related to the drugs nutrient depletion effect.

Some scholars that study pharmaco-economics have postulated Pharmaceutical Care (PC) as a method to improve health care and reduce cost [8]. However, PC models as proposed so far do not include the concept of metabolic correction. Metabolic correction is the use of a synergistic combination of micronutrients and cofactors in the proper active forms and doses that maximize the function of metabolic enzymes in most individuals [9,10]. Metabolic correction actually compensates for drug induced nutrient depletion as well as for the nutrient depletion from environmental toxins.

The expenditure per capita in health care in the US is by far the highest in the world, but its effect on life expectancy is not among the top 20 nations [11,12]. The high level of medication use and technology in the US are not enough to produce the desired results.

When a diet is abundant in refined carbs, added sugars and is low on vegetables, it provides too many empty calories and too little metabolic enhancing micronutrients. This, along with food additives, environmental toxins and the over utilization of medication eventually cause depletion of certain necessary micronutrients. The most cost effective way of improving health is providing quality and quantity of nutrients required while avoiding harmful compounds and facilitating their elimination. Metabolic correction is a concept that supports health maintenance and promotes the healing processes in an effective and safe way by improving the body's biochemical mechanisms providing the necessary cofactors to balance metabolism.

## References

1. (2015) CDC FatStats on Hypertension.
2. (2015) CDC High Blood Pressure Fact Sheet.
3. Kung HC, Fonarow G (2015) Hypertension-related Mortality in the United States, 2000-2013. Centers for Disease Control and Prevention 2015 Report. The American Society of Interventional Pain Physicians Facts Sheets.
4. The American Society of Interventional Pain Physicians Facts Sheets.
5. Miranda-Massari JR, Gonzalez MJ, Jimenez FJ, Allende-Vigo MZ, Duconge J (2011) Metabolic correction in the management of diabetic peripheral neuropathy: improving clinical results beyond symptom control. *Curr Clin Pharmacol* 6: 260-273.
6. Johnson JA, Bootman JL (1995) Drug-related morbidity and mortality. A cost-of-illness model. *Arch Intern Med* 155: 1949-1956.
7. Ernst FR, Grizzle AJ (2001) Drug-related morbidity and mortality: updating the cost-of-illness model. *J Am Pharm Assoc (Wash)* 41: 192-199.
8. Isetts BJ (2012) Pharmaceutical care, MTM, & payment: the past, present, & future. *Ann Pharmacother* 46: S47-56.
9. González MJ, Miranda-Massari JR, Duconge J, Allende-Vigo MZ, Jiménez-Ramírez FJ, et al. (2015) Metabolic correction: a functional biochemical mechanism against disease--Part 1: concept and historical background. *P R Health Sci J* 34: 3-8.
10. Miranda-Massari JR, González MJ, Duconge J, Allende-Vigo MZ, Jiménez-Ramírez FJ, et al. (2015) Metabolic correction: a functional biochemical mechanism against disease--Part 2: mechanisms and benefits. *P R Health Sci J* 34: 9-13.
11. (2015) Organization for Economic Co-operation and Development (OECD).
12. (2015) World Health Organization USA Statistics.