

Editorial: The Role of Nutraceuticals in the Prevention & Treatment of Metabolic Syndrome

GUEST EDITOR'S COMMENTARY

It has been close to a century since the constellation of clinical symptoms associated with the risk factors for diabetes, cardiovascular disease, cerebrovascular disease and renal disease have been identified. Initially observed and reported in the 1920s; however, the term metabolic syndrome was not universally utilized until the late 1970s. In 1947, observations by French physician, Dr. Jean Vague noticed that obesity was also associated with diabetes, atherosclerosis, renal lithiasis and gout. Conversely, Dr. Avogaro Crepaldi reported that several obese patients saw improvement in their diabetes, lipids and blood pressure when they followed a low-calorie and low carbohydrate diet.

The term "metabolic syndrome [1]" was used in 1977 by Herman Haller who was studying the risk factors associated with atherosclerosis. He used the term in reference to the associations between obesity, diabetes mellitus, high blood lipids, a high uric acid level and hepatic steatosis and how the combined presence of these factors increase the risk of atherosclerotic cardiovascular disease. In the same year, Dr. Singer used the term to describe the associations between hyperlipoproteinemia and obesity, gout, diabetes mellitus, and hypertension. In 1988, Gerald Reaven hypothesized that insulin resistance could be the underlying factor linking this constellation of abnormalities, which he went on to name "syndrome X" [2]. The nomenclature describing multiple variations of obesity, hypertension, glucose intolerance, hyperinsulinemia and a high level of triglycerides and cholesterol are as numerous as there are researchers (metabolic syndrome X, cardio metabolic syndrome, insulin resistance syndrome and Reaven's syndrome).

"At least 47 million American adults – or more than one in five – have metabolic syndrome, a disorder that often includes a beer belly, high blood pressure, poor cholesterol readings and high blood sugar", according to a 2002 study.

Dr. E.S Ford, Centers for Disease Control

Regardless of the clinical term that is utilized, the global impact on health care resources and humanity is massive.

- 47 million adult patients meet the criteria for metabolic syndrome which represent over 20% of the adults in the United States [3].
- National inpatient hospital costs for metabolic syndrome with complications were nearly \$400 billion in 2009.
- With appropriate primary care for the complications of metabolic syndrome, nearly \$17 billion in hospital costs might have been averted, with significant potential savings obtained in US government health care programs.
- Non-pharmacological approaches to fight the risk factors associated with metabolic syndrome have been known for centuries.
- The scientific evidence supports the efficacy of nutritional remedies.

WHO Clinical Criteria for Metabolic Syndrome*

Insulin resistance, identified by 1 of the following:

- Type 2 diabetes
- Impaired fasting glucose
- Impaired glucose tolerance

Plus any 2 of the following:

- High blood pressure (≥ 140 mm Hg systolic or ≥ 90 mm Hg diastolic)
- Plasma triglycerides ≥ 150 mg/dL (≥ 1.7 mmol/L)
- HDL cholesterol < 35 mg/dL in men or < 39 mg/dL in women
- BMI > 30 kg/m²
- Urinary albumin excretion rate ≥ 20 μ g/min or albumin: creatinine ratio ≥ 30 mg/g

One would think that increased education and public awareness alone would improve the incidence of individuals with metabolic syndrome; however, among the most educated health care workers (physicians, nurses & nutritionist) the incidence can range up to 24%. Whereas this is consistent with the US national average, I expect that health care educators should lead the way by following their own advice.

While it may be commonplace that physicians will not “heal themselves”, health care providers must be assertive and utilize nutritionist and life saving nutraceuticals for their patients that have metabolic syndrome.

You can lead man to water, yet you can't make him drink. He should jog, order the ginger salmon on steamed broccoli and skip dessert.

REFERENCES

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- [3] Ford ES, Giles WH, Dietz WH. Prevalence of the metabolic syndrome among US adults: findings from the Third National Health and Nutrition Examination Survey. *JAMA* 2002; 287: 356-359.

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