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Research Article

Risk Probability of Having a Metabolic Disorder Induced Cancer (GH-Method: MPM)

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ABSTRACT

The author has spent ten years collecting big data (~2 million data) of his health and lifestyle details in order to conduct his own research on chronic diseases and their various complications. Since 1995, he has suffered three chronic diseases, including diabetes, hyperlipidaemia, and hypertension. He has also endured five Cardiovascular disease from 1994 to 2006, Chronic Kidney Disease (CKD) in 2010, bladder infection, foot ulcer, Diabetic Retinopathy (DR), and hyperthyroidism for the past decade. By 2017, most of his metabolic disorders induced chronic diseases and complications have been well controlled. During the same year, he started to self-study cancer diseases with a particular interest in its causes and prevention via metabolism improvement. Since 2014, by using the topology concept and finite element engineering modelling, he developed a complex mathematical metabolism model to check his overall metabolism state on a daily basis. From 2015 to 2017, by using optical physics, wave theory, energy theory, quantum mechanics, big data analytics, artificial intelligence, segmented pattern analysis, and various statistics tools (time-series, spatial analysis, frequency domain analysis), he has developed four prediction models for four biomarkers, i.e. body weight, Fasting Plasma Glucose (FPG), Postprandial Plasma Glucose (PPG), and HbA1C. All of these models have achieved greater than 95% prediction accuracy. From 2018 to 2019, he further developed two risk assessment models for having CVD/Stroke or CKD. For the first four months of 2020, he started his research on both DR and hyperthyroidism complications.

Keywords: MI; Cancer; Metabolic disorder; Chronic disease; Metabolism

Abbreviation: CVD: Cardiovascular Disease; CKD: Chronic Kidney Disease; DR: Diabetic Retinopathy; FPG: Fasting Plasma Glucose; PPG: Postprandial Plasma Glucose.

INTRODUCTION

This paper describes the investigation regarding risk probability of having cancer which is closely related to overall metabolism status.

MATERIALS AND METHODS

Cancer is an exceedingly difficult and complicated disease that can affect any organ within the body, where abnormal cells divide and mutate rapidly, destroying healthy normal cells in the process. The possible cause of cancer can result from a combination of many different reasons. The author has dedicated the past decade on researching endocrinology and metabolism. He considers that both endocrinology and cancer are quite similar from the viewpoint of “digging into the black box”. However, based on his rudimentary understanding of cancer, he also feels that the diseases caused by cancer are probably at least 10 times more complicated than endocrinology. Although he is not an oncology expert, only a veteran and research scientist on chronic diseases and metabolism, he still has a strong curiosity and motivation in want to know what is his own risk probability of having cancer? This reason inspires his cancer research work by using his strength of metabolism knowledge to conduct his assessment on the relationship between metabolism and cancer.

Table 1 demonstrate three parts of a summarized table developed by the author which connect certain cancer causing or influencing factors and organ systems affected by cancer.

He still has a lot to learn about cancer diseases, for example, which organs in one particular organ system are most likely to be affected by which influential factor. Therefore, this article only serves as the beginning of his long journey of cancer research using his developed GH-Method: Math-Physical Medicine (MPM approach).

The article indicates that there are 23 cancer factors to cause a total of 45.2% of entire cancer cases in China (around 2.3 million cases per year) [1]. Most of these 23 influential factors happen to be a part of components identified in his developed mathematical model of metabolism.

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Table 1: Cancer causing or influencing factors and organ systems affected by cancer details.

Influencing factors	Cancer causing factors	Cancer in organ system
Genetic (5%)	Age	
	Gender	
	Race	
	Family history	
Personal bad habits (25%)	Smoking cigarettes	Respiratory, digestive, endocrine, reproductive, urinary
	Drinking alcohol	Respiratory, digestive, reproductive
	Use illicit drugs	Respiratory, digestive, lymphatic
	Obesity	Respiratory, digestive, endocrine, reproductive, urinary, lymphatic
	Prior personal medical condition	
	Over-weight and large waistline factors	
	Bad food and diet selection (less plant, more animal)	
	Too much processed food, fermented food, Pickled food	
	Infections and Chronic inflammations	
	Insufficient daily exercise	
	Take too many medication drugs	
	High stress life and poor sleep condition	
Environmental factors (15%)	Toxic chemicals	
	Air pollution e.g. PM 2.5	
	Water pollution	
	Expose to food pollution	
	Poison	Digestive
	Hormone therapy	
	Nuclear Radiation (X-Ray, CT etc)	Lymphatic
	UV Radiation	Integumentary, lymphatic
	Infections (Fungi, parasites, bacteria)	
	Cancer- causing chemicals	
Viral infection factors (10%)	*Helicobacter pylori*	Digestive
	Hepatitis B virus	Digestive
	Hepatitis C virus	Digestive
	HIV Virus	Digestive,
	Human Papilloma Virus	Digestive, reproductive, lymphatic
	Epstein-Barr Virus	Respiratory, digestive
	Paragonimus Sinesis	
	Human Herpes Virus Type B	
	Kaposi's Sarcoma	Digestive
	Hodgkin's Lymphoma	Lymphatic
Metabolism related factors (45%)		
Chronical disease conditions (15%)	Obesity	Digestive, endocrine, reproductive, urinary, lymphatic, cardovascular
	Diabetes (Insulin resistance)	
	Hypertension	
	Hyperlipidemia	
	Hyperthyroidism	
	Infections (foot ulcer)	
	CVD and stroke	

	CKD	
	Immunosuppression (after organ transplant)	
	Chronic Inflammation (viral or bacterial)	
Lifestyle details (30%)	Food and diet	Respiratory, digestive, endocrine
	Exercise and physical activities	
	Water drinking	
	Sleep	
	Stress	
	Regular daily life routine	

He started his investigation from identifying major causes and the possible organ systems affected by cancer. Of course, like many other branches of medical research, he started with the sub-area of genetics, including his age, race, gender, and family genetic background. He has assigned 5% of weight to this sub-area of genetic factors [2].

Secondly, he developed into the sub-area of personal bad habits including smoking or chewing tobacco, drinking alcohol and/or taking illicit drugs that would lead into various kinds of cancer affecting different organ systems [3]. In addition, he also looked into other components, such as having unhealthy diet, inactive lifestyle, high stress life, poor sleep quality, and personal medical history along with types, amounts, and duration of medication intake that would also lead into different kinds of cancers. He assigned 25% of weight to this sub-area of personal bad habits factors [4].

Thirdly, the sub-area of environmental factors includes toxic chemicals, air pollution (e.g. PM 2.5), water pollution, food pollution, poison, hormone therapy, nuclear radiation (e.g. X-ray, CT), UV radiation, infection from parasites and bacteria, or other cancer-causing chemicals, and more. He assigned 15% of weight to this sub-area of environmental factors. As an example, relatively speaking, China could have a higher percentage of cancer cases in this sub-area due to its highly polluted environment, including land, water, and air [5].

Fourth, the sub-area of viral infection factors includes *Helicobacter pylori*, Hepatitis B Virus, Hepatitis C Virus, HIV Virus, Human Papilloma Virus, Epstein-Barr Virus, *Paragonimus Sinensis*, Human Herpes Virus Type 8, Kaposi's Sarcoma, Hodgkin's Lymphoma, and others. He assigned 10% of weight to this sub-area of viral infection factors [6].

Fifth, the sub-area of metabolic disorder induced chronic diseases and their various complications include obesity, diabetes, hypertension, hyperlipidemia, CVD, stroke, CKD, bladder infection, hyperthyroidism, bladder infection, foot ulcer, RD, and more. He assigned 15% of weight to this sub-area of chronic diseases factors [7].

Finally, the sub-area of lifestyle details should be the foundation of the causes mentioned in the above situations except for the genetic factor. This sub-area include six categories, i.e. food and diet, exercise, water drinking, sleep, stress, and daily routine life pattern. These categories in combined with the fifth sub-area of chronic diseases would have approximately 500 detailed elements (from finite "element" method of engineering) [8].

The author spent 10 years to develop and continuously enhance a sophisticated and customized software program to collect all kinds of input data and process them dynamically in order to provide a daily guideline to himself for the purpose of improving his overall metabolism. Once his metabolism is in good condition, then his immune system will be strong enough to defend against three major disease groups that cause death [9]. These 3 major diseases are chronic diseases with various complications (50%), cancers (29%), infectious diseases (11%), along with non-diseases causing death (10%). The death percentages mentioned can be observed in (Table 2).

RESULTS

The author's calculated risk probabilities, expressed in %, of having cancer for the past 10 years are listed also see (Figure 1).

These paragraphs have described the backbone of his mathematical model for calculating his risk probability of having different cancer cases which are closely related to metabolism.

(1) Year of 2010: 85%-obesity BMI 31, 3 chronic diseases, 5 cardiac episodes

(2) Year of 2012: 57%-weight reduction started, more careful about diet, started daily exercise, CKD

(3) Year of 2013: 53%

(4) Year of 2014: 50%-developed metabolism model and started his lifestyle management program

(5) Year of 2015: 46%-BMI 25, FPG under control

(6) Year of 2016: 43%-both PPG and HbA1C under control

(7) Year of 2017: 41%-overall metabolism reached to the best condition

(8) Year of 2018: 42%-heavy traveling for medical conferences

(9) Year of 2019: 42%-heavy traveling for medical conferences

(10) Year of 2020: 41%-first 5 months, returning to the fine status of 2017 due to COVID-19 quarantine

It should be noted here that the risk probability percentages are expressed on a "relative" scale, not on an "absolute" scale. Nevertheless, the overall trend of risk % of having cancer is reducing which is an encouraging news to him. Figure 2 displays his overall metabolism index and body weight during the period of 2012 through 2020.

It is obvious that his risk probability of having cancer is reduced year after year when he maintains his lifetime personal policy of no smoking, no drinking, no drugs, and continuously reducing his BMI from his peak at 32 down to a constant level of 25, controlling his glucose and HbA1C, blood pressure, and lipids, within normal ranges, and watching out for other important biomarkers, such as ACR, TSH, etc. via his metabolism model by following his own stringent lifestyle management program [10].

Table 2: Annual death cases and percentages by disease groups (US CDC, 2017).

2017 death	Category	Percentage
Heart	647,457	31%
Cancer	599,108	29%
Accidents	169,936	8%
Respiratory	160,201	8%
Stroke	146,383	7%
Alzheimer's	121,404	6%
Diabetes	83,564	4%
Pneumonia	55,672	3%
Kidney	50,633	2%
Suicide	47,173	2%
Total	2,081,531	100%
Chronic related	1,049,441	50%
Cancer	599,108	29%
Infectious	215,873	11%
Accidents and suicide	217,109	10%

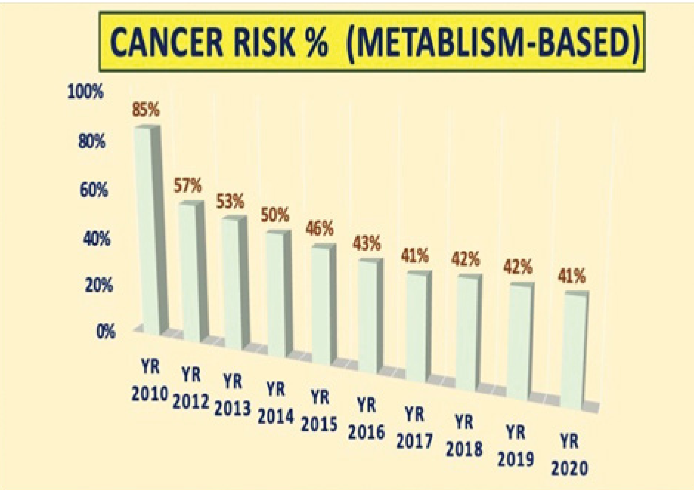

Figure 1: Risk probability % of having cancer induced by metabolic disorders.

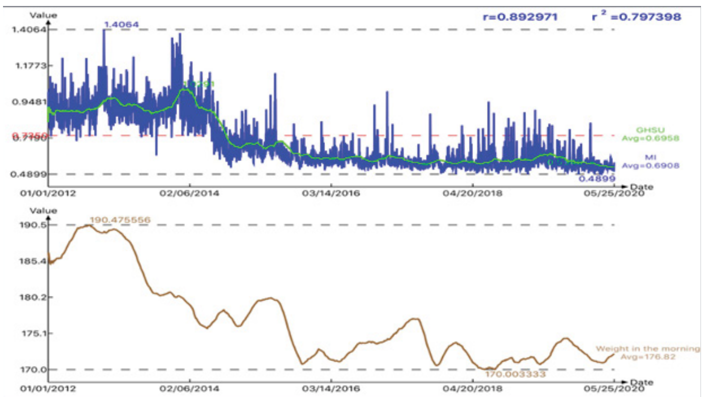

Figure 2: Risk probability % of having CVD/Stroke and CKD.

As shown in Figure 3, it is not surprising to notice that, similar to his cancer risk %, both of his risk probabilities of having CVD/ Stroke and CKD are reducing as well [11].

CONCLUSION

These calculated cancer risk probability results are also validated by his many health examination reports for the past 17 years. This big data based on a dynamic simulation model using GH-Method: math-physical medicine approach could provide an early warning to himself about which factors to watch out for and then improve his health conditions continuously in combined with paying extra attention on needed areas.

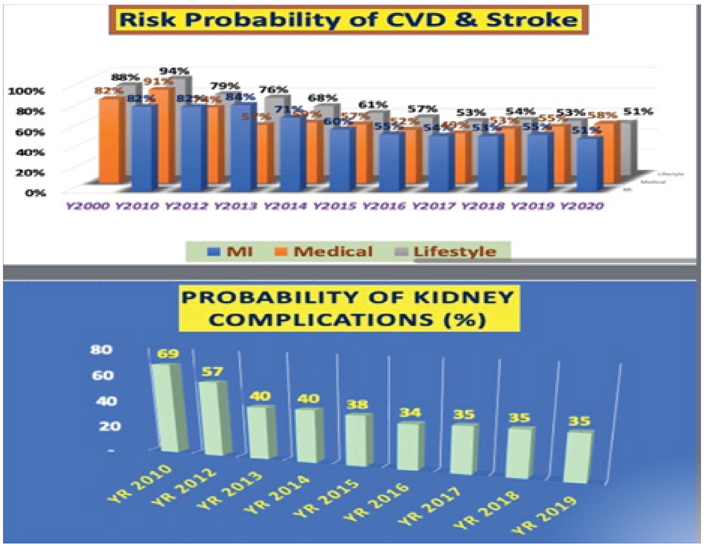

Figure 3: Metabolism index and body d (2012-2020).

The author decided to write this research note to share with other people, who may have similar interest to reduce their probability of getting cancer. As he said repeatedly, he is not an expert on oncology but a research scientist in metabolism. However, metabolism and cancer have an extremely strong relationship between each other. Therefore, hopefully, his research method and findings would have some merit to help others.

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