

Diabetes Destiny in our Hands: Achieving Metabolic Karma

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Abstract

Karma is the ancient Indian philosophy of cause and effect, which implies that an individual's intentions, and actions, both have consequences. None can escape the consequences of one's actions. Applying the principle of karma to medicine and healthcare, the significance of optimal and timely interventions at various stages of disease, may be realized. A holistic approach to metabolic control in diabetes translates into improved clinical outcomes, as evident from the result of STENO-2, EMPA-REG OUTCOME, or LEADER trials. The principle of karma in the management of diabetes may have implications at the transgenerational level during pregnancy and nursing, at the individual patient-level based on phenotype, and at the community level in preventive medicine. The concept of metabolic karma can be used as an effective motivational tool to encourage better health care seeking behavior and adherence to prescribed interventions.

Keywords: Gestational diabetes mellitus, glycemic legacy, metabolic memory, type 2 diabetes

INTRODUCTION

"It is not in the stars to hold our destiny but in ourselves."

-William Shakespeare

THE LEGACY EFFECT

The concept of glycemic legacy or metabolic memory is well understood by physicians, who aim to achieve optimal long-term therapeutic outcomes by achieving tight glucose control. This concept has been extended to other spheres of management, with vascular legacy being noted for diverse interventions such as lifestyle modification, lipid-lowering therapy, and debatably for antihypertensive therapy.^[1]

THE PHILOSOPHY OF KARMA

Indian philosophy suggests the existence of "karma" in life. Loosely translated as destiny or fate, karma (Sanskrit) or kamma (Pali) is defined as the sum of a person's actions in this and previous states of existence, and viewed as deciding their fate in future existences. In Hindu, Buddhist and Tao philosophy, karma serves the purpose of serving as an etiology or cause of various experience of life. It also serves as a strong motivator, ensuring "ethical" conduct as prophylaxis against future suffering. Karma is used not only as a goal or target but also as the sum of actions

executed to achieve this aim. It contrasts with a similar Sanskrit word, "kriya" which describes just the activity, along with steps and effort in action, but does not encompass the ethical nature, or outcome, of such activity.

KARMA IN MEDICINE

Karma suggests that one's own actions lead to various states of existence. Some of these may be modifiable, while others may not. This is similar to what we encounter in modern medical research. Some determinants of health may be genetic in nature, i.e., carried over from a "previous existence." Yet others may be environmental or related to the current life lifestyle. Thus, the concept of karma can straddle the entire spectrum of modern noncommunicable disease, including diabetes.

KARMA IN DIABETES

Thomas has used the term "metabolic karma" to explain the phenomenon of glycemic legacy in diabetes.^[2] We appreciate his use of Sanskrit, India's ancient language, to convey this meaning in a wholesome manner. Karma is not only the sum of

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all action, but also includes the intent behind these actions as well. From a diabetes care perspective, we would take this to mean consideration of targets, and the techniques for achieving such targets. Timely and optimal interventions, aimed at achieving recommended metabolic targets, do contribute to a sustainable improvement in overall outcomes of diabetes. The holistic approach of metabolic karma encompasses diagnostic as well as therapeutic considerations, at various stages of disease. The different dimensions of preventive medicine,^[3] as enlisted in Table 1, nicely exemplify a holistic approach to metabolic karma.

Multiple trials have proved that appropriate glucose-lowering, blood pressure, and comprehensive management can improve long-term outcomes. The benefits accrued by such management strategies are maintained even when the initial difference in control is lost. Most recently, the STENO2 study reported an increased survival of 7.9 years, if comprehensive control was instituted, over a follow-up of 22 years. The words “metabolic karma,” therefore, are more appropriate than the phrase “glycemic karma.”^[4]

As a corollary, use of drugs associated with poor efficacy or appropriateness, poor tolerability, high risk of hypoglycemia, or high glycemic variability, can be termed as “bad pharmacological karma” or suboptimal therapeutic karma. The use of an inappropriate glucose-lowering drug, or an unsuitable insulin regime, to achieve an unwarranted target, is bad “glycemic karma,” which will, in turn, lead to suboptimal outcomes or bad clinical karma.

POSITIVE OUTLOOK

However, good metabolic karma can be achieved in real world experience. This can be done by timely institution of a healthy lifestyle, glucose lowering, blood pressure lowering, lipid-lowering, and weight lowering drugs if required. The results of EMPA REG OUTCOME and LEADER trials suggest that appropriate choice of drugs (empagliflozin and liraglutide, respectively) does influence long-term outcomes.^[5,6] This supports the thought that Diabetes Destiny can be modified by appropriate “metabolic kriya.”

TRANSGENERATIONAL KARMA

Metabolic or glycemic karma may affect the unborn generation as well. Women who can prevent or manage their gestational diabetes mellitus effectively give birth to healthier newborns. On the contrary, children of women with uncontrolled diabetes during pregnancy have poorer long-term outcomes. Thus, metabolic karma has a transgenerational impact, similar to the transexistential persistence of karma.

TRANSINDIVIDUAL KARMA

As diabetes care professionals, it is our responsibility to achieve good metabolic control in every person with diabetes. The phenotypic characteristics of each individual patient,

Table 1: Holistic approach to metabolic karma: Learnings from preventive medicine

Type of prevention	Implications to practice
Primordial prevention	Measures to prevent development of risk factors for disease
Primary prevention (prevention)	Measures to avoid the development of disease
Secondary prevention (treatment)	Measures for early detection and treatment of disease
Tertiary prevention (rehabilitation)	Measures to reduce harm from symptomatic disease
Quaternary prevention	Measures to avoid over-medicalization and unnecessary interventions

including the demographic, glycemic, cardiometabolic, or renal phenotypic characteristics, have considerable clinical implications. The actions we undertake, after considering all these factors, are our karma. Good karma (intention and action), performed by us, will benefit not only the person with diabetes, and the community at large, but will also impact and transform our karma (fate or destiny) in a positive manner. Thus, every correct clinical decision that we make has a multifold cascading effect on karma, both ours and the patient's.

SUMMARY

The concept of karma is an appealing one. It helps understand the advantages of achieving tight glycemic and metabolic control in persons with diabetes, using appropriately individualized patient-centric therapy. Good karma can be gained within the same life, may transfer to the unborn offspring of antenatal women with diabetes, and also accrues to the diabetes care professional who works sincerely to control the diabetes endemic.

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Conflicts of interest

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