The glycaemic sixer [glycaemic hexad]
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Abstract
This opinion piece describes a cricket-based analogy, the Glycaemic Sixer, for diabetes care. The hexad lists six glycaemic parameters which must be targeted to achieve optimal cardiovascular outcomes. All six parameters, i.e., fasting glucose, post prandial glucose, glycosylated haemoglobin, avoidance of hypoglycaemia, avoidance of nocturnal hypoglycaemia, and minimization of glycaemic variability, are associated with cardiovascular outcomes. Hence, equal attention must be paid to all these while planning strategies and choosing drugs for diabetes management. The Glycaemic Sixer promotes safety along with efficacy, and supports institution of individualized, patient centred care, using evidence-based therapeutic agents.

Keywords: Efficacy, Safety, Glycaemic triad, Glycaemic pentad, Patient centred care, Type 2 diabetes.

Scoring Six in Cricket
In cricketing parlance, a Sixer, or six runs, is the maximum a batsman can score off a single ball. In other words, this is the optimal outcome for the scoring player. In diabetes care, one aims to achieve best possible outcomes. This goal is achieved by targeting risk factors such as hyperglycaemia, blood pressure, lipids and body weight.

Therapeutic Dyad
Early on in the management of diabetes, it was thought that glucose-lowering potency, i.e., efficacy, was the primary characteristic of an ideal glucose-lowering drug. Various insulin and oral hypoglycaemic drugs were developed, which were able to achieve euglycaemia. However, it was soon realized that lowering glucose levels alone was not enough. It was equally important to prevent hypoglycaemia, and prevent early or untimely mortality.1 Diabetes therapy then began to follow a bipolar target: correction of hyperglycaemia, and prevention of hypoglycaemia.

Glycaemic Triad
Further developments in understanding of pathophysiology and in glucose monitoring created the construct of a glycaemic triad. This suggested that fasting glucose, post prandial glucose and glycosylated haemoglobin (HbA1C) were equally important targets of therapy.2 This framework was evidence-based, as robust clinical trial data was available to prove the independent relationship between these glycaemic parameters and cardiovascular outcomes.3,4 The glycaemic triad, however, was purely efficiency based. It was supported therefore, by another pedagogic tool, the therapeutic triad. This triptych lists efficacy, safety and tolerability as equivaluable goals of treatment.5

Glycaemic Pentad
Developments in patient centred philosophy of diabetes care led to focus on the word ‘tolerability’. This was further expanded in the glycaemic pentad, which listed fasting glucose, postprandial glucose, HbA1c, lack of hypoglycaemia, and quality of life.6 The glycaemic pentad was further refined, based upon advances in glucose monitoring. In this evidence-based pentad,7 the fifth component was taken as minimizing of glycaemic variability.

The glycaemic pentad was supported by evidence from well conducted studies, which demonstrated the independent association of each component with adverse cardiovascular outcomes.8,9

Glycaemic Hexad/Sixer
Recent advances in pharmaceutical science, however, have encouraged higher standards of care in diabetes. Such standards now include not only avoidance of hyperglycaemia and hypoglycaemia, and minimal glycaemic variability, but specifically avoidance of nocturnal hypoglycaemia.10 Nocturnal hypoglycaemia has a different etiopathogenesis and clinical presentation as compared to daytime hypoglycaemia, and is linked with poor quality of life, adverse cardiovascular outcomes, and overall outcomes. Hence, it is rational to include lack of nocturnal hypoglycaemia as a target while planning glucose-lowering therapy.

We therefore propose the Glycaemic Sixer as a clinical tool with which to assess planned glucose lowering
strategies and therapies (Table). This tool can be used as an effective pedagogic instrument, by both students and clinicians. It is both evidence based, and practical in its approach.

**Summary**

Keeping the person with diabetes at the centre of this hexad, we hope the Glycaemic Sixer will find popularity, especially in cricket-playing nations. The number six also figures in sports such as rugby, basketball and volleyball, and the Glycaemic Sixer can be customized as a Glycaemic Hexad for use in non-cricket playing nations.

Such teaching aids should help enhance the quality of education in diabetology and therapy and thereby improve the quality of care of persons living with diabetes, throughout the world.

**References**


