

Glycosylated haemoglobin as a predictor of cardiovascular events and mortality: A protocol for a systematic review and meta-analysis

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Introduction: Glycosylated haemoglobin level (HbA1c) is an indicator of the average blood glucose concentrations over the preceding 2-3 months and is used as a convenient and well-known biomarker in clinical practice. Currently, epidemiological evidence suggests that HbA1c level is an independent risk factor for cardiovascular events such as myocardial infarction, stroke, coronary heart disease and heart failure. This protocol aim is to conduct a systematic review and meta-analysis to determine relationships of HbA1c levels with cardiovascular outcomes and cause of death, and to analyse the range of HbA1c levels that is a predictor of cardiovascular disease and/or mortality based on data from published observational studies.

Methods and analysis: The search will be conducted using Medline, EMBASE, Cochrane Central Register of Controlled Trials, Cochrane Database of Systematic Reviews, and Web of Science databases from their inception. Observational studies written in Portuguese, Spanish or English will be included. The Quality In Prognosis Studies tool will be used to assess the risk of bias for the studies included in the systematic review or meta-analysis. HRs for cardiovascular outcomes and causes of death with 95% CIs will be determined as primary outcomes. Subgroup analyses will be performed based on cardiovascular outcomes, cause of death studied, and type of population included in the studies.

Ethics and dissemination: This systematic review will synthesise evidence on the potential of using HbA1c level as a prognostic marker for cardiovascular disease outcomes and/or mortality. The results will be disseminated by publication in a peer-reviewed journal. Ethics approval will not be needed because the data used for this systematic review will be obtained from published studies

and there will be no concerns about privacy. Trial registration number: PROSPERO

CRD42015032552.