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Diagnosing prediabetes for assessing its effect on prognosis after coronary intervention – are fasting glucose and glycosylated haemoglobin enough?

Sudipta Chattopadhyay[1]*, MD, FRCP; Joseph John[2], MD, FRCP

1. Department of Cardiology, Milton Keynes University Hospital, Milton Keynes, United Kingdom; 2. Department of Cardiology, Castle Hill Hospital, Kingston upon Hull, United Kingdom

We read with interest the paper by Kok et al[1]. It concludes that prediabetes mellitus (pDM) imposes a higher risk of major adverse cardiovascular events (MACE) than normoglycaemia (NG) in patients, two thirds with acute coronary syndrome (ACS), undergoing coronary stenting.

pDM was defined on the basis of HbA1c and fasting plasma glucose (FPG). In the absence of two-hour post-load glucose (2 hr-PG), it is unclear as to how many of the pDM patients had impaired glucose tolerance (IGT) or DM. It is widely accepted that FPG and HbA1c underdiagnose DM and do not diagnose IGT[2,3]. The definition of pDM used does not clarify whether the patients with impaired fasting glucose (IFG) had "isolated" IFG or not. Thus, it is highly likely that a large proportion of patients with pDM had undiagnosed IGT or DM. The difference in MACE between NG and pDM may be driven by events in patients with undiagnosed IGT/DM rather than pDM diagnosed without 2 hr-PG. Absence of difference in glycaemic status of the pre-DM and DM groups may also explain the lack of difference in outcome between these groups.

In ACS populations, FPG and HbA1c cease to predict MACE independently when included in the same models as 2 hr-PG[2-5]. In the absence of 2 hr-PG, it is unreasonable to suggest that pDM diagnosed without 2 hr-PG imparts an increased risk of MACE compared to NG.

The HR is not adjusted for the Global Registry of Acute Coronary Events (GRACE) score (GRS) in a study of mostly ACS patients. Whether pDM diagnosed on FPG and HbA1c would predict MACE if GRS were to be included in the model remains to be seen. There are no data to support that pDM predicts events if GRS is included.

The number of vessels treated and stents used were more in the pDM group than in the NG group. The trial used three stents with very different strut sizes, polymers and drugs. The distribution of these stents in the groups is not stated. Given that one of the main drivers of MACE is repeat revascularisation, it would be important to see whether the stent characteristics influenced the difference in MACE in the pDM vs. NG groups. The Cox proportional hazards model should have included stent characteristics.

Corresponding author: Department of Cardiology, Milton Keynes University Hospital, Standing Way, Milton Keynes, MK6 5LD, United Kingdom. E-mail: Sudipta.Chattopadhyay@nhs.net

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Conflict of interest statement

The authors have no conflicts of interest to declare.

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