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OPTIMAL HAEMOGLOBIN A1C CUTOFF VALUE FOR DIABETES MELLITUS AND PRE-DIABETES IN PUDONG NEW AREA, SHANGHAI, CHINA

Xianfeng Zhou[a]
[a]Center for Disease Prevention and Control, Pudong New Area, China

Introduction: The latest China Guideline for Type 2 diabetes mellitus (T2DM) in 2013 didn't recommend HbA1c for diagnosis of diabetes and pre-diabetes. It requires considerable research to evaluate HbA1c diagnostic threshold for diagnosis of hyperglycaemia.

Materials & Methods: We included 7909 subjects aged ≥15 without known diabetes from the baseline of Pudong community cohort in 2013. Participants took oral glucose tolerance test (OGTT) and HbA1c assay. Receiver operating characteristic curve determined the HbA1c threshold in the diagnosis of hyperglycaemia.

Results: The optimal HbA1C threshold for diagnosing newly diagnosed diabetes (NDD) and pre-diabetes in this population was 6.0% (AUC=0.798, 95%CI: 0.779-0.818, P<0.001) and 5.6% (AUC=0.655, 95%CI: 0.638-0.671, P=0.008). The sensitivity (pre-diabetes: 51.78%, NDD: 63.60%) and specificity (pre-diabetes: 72.63%, NDD: 84.86%) of pre-diabetes was lower than NDD. The AUC of HbA1c for diagnosing NDD and pre-diabetes in subjects <60 years was larger than older (≥60 years) subjects (NDD: P=0.002, pre-diabetes: P=0.02). There were 13.81% and 14.34% of participants would be newly detected as NDD and pre-diabetes via HbA1c criteria; meanwhile almost 3.20% and 15.52% diagnosed as NDD and pre-diabetes by OGTT criteria would be missed diagnosis.

Conclusions: The optimal HbA1c thresholds for NDD and pre-diabetes were lower than ADA criteria. HbA1c and OGTT are discordant for diagnosis of hyperglycaemia. It is necessary to carefully consider whether choose HbA1c as a diagnostic criterion or combine two diagnostic standards. Age-specific diagnostic thresholds should be considered when HbA1c was recommended as diagnostic standard.

Biography

Xianfeng Zhou has her expertise in disease surveillance and passion in chronic disease prevention and control. She and her project team built a cohort based on the community and contained ten thousand people in Pudong New Area. Since 2013, she and her project team carried out a follow-up survey every three year to observe the incidence and prevalence of chronic diseases such as hypertension, diabetes, chronic obstructive pulmonary disease and the dynamic change trend of risk factors related to chronic diseases. At the same time, they built Biobank. She is focused on the study of internal and external environmental exposure factors of chronic disease, further provide data support for chronic disease prevention and control in Pudong New Area.

zhouxianfeng0908@126.com

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