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EDITORIAL

Understanding cardiovascular risks in type 2 diabetes mellitus

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Type 2 diabetes mellitus (T2DM) is increasingly recognized not only as a metabolic disorder but also as a significant risk factor for cardiovascular disease (CVD). Recent studies shed light on various aspects of cardiovascular risk specifically among T2DM patients, highlighting critical areas such as remnant cholesterol (RC), the diagnostic potential of lipoprotein-associated phospholipase A2 (Lp-PLA2), and the implications of visceral adiposity in evaluating cardiovascular risks. This editorial aims to synthesize the findings from these studies while emphasizing their implications for clinical practice and future research. [1–4]

High remnant cholesterol in T2DM

A cross-sectional study published in this issue was conducted in New Juaben Municipality, Ghana [5] documented a substantial prevalence of high remnant cholesterol among T2DM patients. The study encompassed 398 participants with a median age of 50 years, revealing that 60.3% of individuals exhibited elevated levels of RC. Notably, the demographic analysis underscored the heightened risk among younger age groups (26–45 years) and specific occupational groups, such as farmers and retirees.

The high prevalence of remnant cholesterol indicates an urgent need for systematic screening and management strategies tailored to distinct populations at risk. Remnant cholesterol, often overlooked, is a significant component of lipid metabolism that may provide insights into atherogenic dyslipidaemia, which is characteristic of T2DM patients. With the prevalence of cardiovascular disease significantly elevated in this demographic, understanding and targeting remnant cholesterol could be a pivotal step in enhancing patient outcomes and reducing healthcare burdens associated with diabetes-related complications.

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The diagnostic value of Lp-PLA2

Another study published in present issue investigated the predictive value of Lp-PLA2 levels as a biomarker for coronary artery disease (CAD) in T2DM patients [6]. The findings suggested that serum Lp-PLA2 concentrations could serve as a diagnostic marker, particularly in individuals without CAD. The cardioprotective role of Lp-PLA2 emphasizes its importance as a potential tool for stratifying cardiovascular risk and guiding therapeutic interventions.

The study established a cutoff value of > 115 ng/mL for Lp-PLA2, demonstrating excellent sensitivity and specificity. This finding underscores the need for integrating Lp-PLA2 measurement into routine clinical assessments for T2DM patients. By identifying those at elevated risk for CAD, healthcare providers can tailor management strategies, including the initiation of preventive measures and lifestyle modifications targeted at reducing cardiovascular risk.

Glycated haemoglobin and visceral adiposity index

Furthermore, research has illuminated the significant relationship between glycated haemoglobin (HbA1c), haematocrit levels, and visceral adiposity index (VAI) with the Systematic Coronary Risk Evaluation 2 (SCORE2) in non-diabetic individuals. This correlation highlights the importance of considering HbA1c as a marker of cardiovascular risk even in non-diabetic populations. This study in present issue reinforces previous findings that indicate a closer association between cardiovascular risk profiles and visceral fat accumulation as opposed to total body weight or BMI [7].

Moreover, these findings advocate for the need to evaluate cardiovascular risks utilizing the VAI, particularly in patients who present with normal BMI but may harbour hidden risks due to visceral fat accumulation. The recognition of these subtle yet significant correlations could pave the way for innovative risk assessment strategies and preventive healthcare measures tailored to individual patient profiles.

Carotid atherosclerosis risk factors

The relationship between T2DM and carotid atherosclerosis is another area that warrants attention. Study by Chen et al. focusing on risk factors for carotid atherosclerosis in T2DM patients found that male sex, older age, prolonged disease duration, hypertension, and high LDL cholesterol levels contributed significantly to the risk profile [8]. The study's predictive models demonstrated commendable discrimination, with an area under the receiver operating characteristic curve of 0.862, illustrating the models' effectiveness in identifying at-risk patients.

Addressing these established risk factors through comprehensive management plans, including lifestyle interventions and medication adherence, could substantially mitigate the risk of atherosclerotic events in T2DM patients. Moreover, integrating cardiovascular health monitoring into diabetes care can lead to timely interventions for individuals identified as being at high risk.

Exercise interventions and cardiovascular risk

The impact of exercise interventions on cardiovascular health among obese adults has also been investigated. A recent study by Ehsan Mir et al. in this issue inspected the effects of aerobic, resistance, and combined exercise training on serum FAM19A5 levels and various cardiovascular risk factors. While serum FAM19A5 levels did not show significant changes following the interventions, the results indicated improvements in HOMA-IR, triglyceride levels, systolic blood pressure, BMI, and overall aerobic performance [9].

These findings reinforce the notion that physical activity plays a crucial role in managing obesity and enhancing metabolic health. Exercise regimens tailored to individual capabilities may offer a viable strategy for improving cardiovascular health in populations at risk, such as those with T2DM and obesity. Future research should continue to explore the underlying mechanisms through which exercise influences cardiovascular outcomes, particularly in diverse populations.

Conclusion

The interlinked nature of T2DM and cardiovascular disease emphasizes the need for a multi-faceted approach to patient care. The studies reviewed herein underscore the importance of screening for remnant cholesterol, utilizing biomarkers like Lp-PLA2, considering HbA1c and visceral adiposity in risk assessments, and promoting exercise as a crucial component in managing cardiovascular risks. Implementing these strategies in clinical practice not only enhances patient outcomes but also contributes to a broader understanding of the cardiovascular implications of diabetes. This substantial body of work illustrates that addressing cardiovascular health in T2DM patients is vital for improving health outcomes and reducing the burden of chronic diseases.

Future research should focus on larger, longitudinal studies to validate these findings and explore the complexities of cardiovascular risk management in T2DM. Interdisciplinary collaboration among endocrinologists, cardiologists, dietitians, and exercise specialists will be crucial in developing comprehensive care pathways that address the multifactorial nature of T2DM and its associated cardiovascular risks.

Data Availability It's author's perspective. No data required to be quoted.

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