DRS-WCPD: 11th World Congress on Prevention of Diabetes and Its Complications

PREVENTION OF HEART FAILURE IN DIABETES

Dr PC Manoria, Bhopal

- Human myocytes do not have an endogenous capacity for repair; once dead, they cannot regenerate.
- Preventing heart failure (HF) is critical, as it follows a malignant progression once it sets in and is associated with high mortality and morbidity.
- Serum biomarkers like B-type natriuretic peptide (BNP) >50 pg/mL and N-terminal pro-BNP (NT-proBNP) >135 pg/mL should be included in the assessment of stages A and B of HF.
- The prevention of HF in clinical practice is often neglected, highlighting an urgent need to promote current scientific knowledge on HF prevention in stages A and B.

LINAGLIPTIN/DAPAGLIFLOZIN/METFORMIN FDC: THE NEW KID ON THE BLOCK

Dr L Sreenivasa Murthy, Bengaluru

Approximately 67% of type 2 diabetes mellitus (T2DM) patients in India do not meet their target glycated hemoglobin (HbA1c) goals. As a multifactorial disease with significant cardiorenal complications, T2DM requires the use of oral antidiabetic drugs that address multiple pathophysiological defects to achieve effective glycemic control.

Delayed treatment intensification in high-risk patients increases the likelihood of myocardial infarction and stroke. Research indicates that early, intensive glycemic control can reduce the risk of both micro- and macrovascular complications. According to the American Diabetes Association (ADA) guidelines, combination therapy is recommended when HbA1c is ≥1.5% above target levels.

The fixed-dose combination (FDC) of metformin, dapagliflozin, and linagliptin improves glycemic control and addresses cardiorenal complications, reflecting real-world clinical practices. This once-daily regimen targets a wide range of pathophysiological factors involved in hyperglycemia, improving patient compliance, and quality of life.

Key Observations

- Combination therapy addresses multiple pathophysiological defects, achieving significant HbA1c reduction while minimizing pill burden.
- Combining dapagliflozin and linagliptin with metformin offers clinically meaningful improvements in glycemic control with better tolerability and safety.
- Studies have shown that the triple combination of linagliptin, dapagliflozin, and metformin not only provides glycemic efficacy but also enhances cardiorenal safety. Additionally, linagliptin does not require routine monitoring of urine albumin-to-creatinine ratio (UACR) and does not need dose adjustments.
- The triple combination of metformin, dapagliflozin, and linagliptin can be used safely in patients with an estimated glomerular filtration rate (eGFR) as low as 30 mL/min/1.73 m^2.

LADA: A MYSTERY SOLVED

Dr Narayan Deogaonkar, Nashik

- Latent autoimmune diabetes in adults (LADA) exhibits characteristics of both type 1 diabetes mellitus (T1DM) and T2DM.
- Early diagnosis is crucial for initiating the appropriate treatment and preventing complications.
- Clinicians should consider screening for LADA in patients with T2DM who do not achieve adequate glycemic control despite adhering to therapy.
  - Especially if they are not obese, lack features of metabolic syndrome, or have a personal or family history of autoimmune disorders.
- Recent insights into LADA's pathophysiology reveal that beta-cell destruction progresses slowly.
- A C-peptide test, whether basal or after a mixed meal, can be an initial, cost-effective screening tool to identify patients needing further confirmatory testing for islet autoantibodies.
- Insulin and dipeptidyl peptidase-4 (DPP-4) inhibitors, either alone or in combination with insulin,

thiazolidinediones, and glucagon-like peptide-1 (GLP-1) receptor agonists, have demonstrated effectiveness in achieving glycemic control and preserving beta-cell function.

REASSURING HYPERTENSION MANAGEMENT WITH CV PROTECTION IN YOUNG

Dr Anuj Maheshwari, Lucknow

Hypertension is a key risk factor for a range of cardiovascular conditions, such as coronary artery disease, left ventricular hypertrophy, valvular heart disease, atrial fibrillation, stroke, and renal failure. The continuous correlation between blood pressure levels and cardiovascular events blurs the distinction between high normal blood pressure and hypertension, as the cut-off values are somewhat arbitrary. Prevention and treatment of cardiovascular disease should be based on a comprehensive assessment of overall cardiovascular risk, which can be estimated using various models. However, age heavily influences risk categorization. Young adults, particularly women, may not be classified as high-risk despite having several major risk factors, emphasizing the importance of age-adjusted models. These models should evaluate relative risks compared to peers of the same age and incorporate assessments of target organ damage and 24-hour ambulatory blood pressure monitoring.

Key strategies for cardiovascular protection include:

- Managing dyslipidemia in young hypertensive patients with statins and following aspirin guidelines for primary prevention.
- Regularly monitor blood pressure at home and in clinical settings, as well as track kidney function, ECGs, and echocardiograms.
- Addressing barriers such as cost and side effects, utilizing educational strategies, simplified treatment regimens, and mobile apps to enhance patient outcomes can improve adherence.
- Leveraging digital health technologies, such as noninvasive blood pressure measurement devices and data storage systems, which are expected to play an increasing role in hypertension management, will improve both care and adherence.
- The continued use of existing antihypertensive medications, which are effective and well-tolerated.
- Expanding the use of free and fixed-drug combinations, such as spironolactone and other mineralocorticoid receptor antagonists.
- Considering medications initially developed for HF and diabetes that also have blood pressure-lowering effects.

LIVER AS A TARGET FOR PREVENTING DIABETES

Dr Bijay Patni, Kolkata

The liver is pivotal in glucose metabolism, managing blood sugar levels through glycogenesis and gluconeogenesis. It stores excess glucose as glycogen and releases it when necessary. Impaired liver function can disrupt glucose homeostasis and contribute to diabetes development. Research indicates that early detection and targeted treatment of nonalcoholic fatty liver disease (NAFLD) could help prevent T2D. Hence, liver-focused preventive strategies present a promising approach to tackling the diabetes epidemic.

Some effective pharmacological and nonpharmacological preventive measures include:

- Certain medications, such as GLP-1 agonists (e.g., liraglutide, semaglutide) and sodium-glucose cotransporter-2 (SGLT2) inhibitors (e.g., empagliflozin, canagliflozin), have demonstrated promising results in enhancing liver health and lowering diabetes risk.
- Ongoing clinical trials are exploring novel therapies, including farnesoid X receptor (FXR) agonists and apoptosis signal-regulating kinase 1 (ASK1) inhibitors, for treating NAFLD and preventing diabetes.
- Supplements like vitamin E and pioglitazone might also improve liver health and reduce diabetes risk, though further research is needed.
- Medications such as metformin and peroxisome proliferator-activated receptor (PPAR) agonists, especially PPAR-γ, show potential. These agents enhance insulin sensitivity and liver histology by reducing proinflammatory cytokines and increasing adiponectin production.
- A healthy diet, such as the Mediterranean diet, can help decrease liver fat and improve insulin sensitivity.
- Regular physical activity, including brisk walking or moderate-intensity exercise, reduces liver fat and enhances overall metabolic health.
- Maintaining or achieving a healthy weight is essential for improving insulin sensitivity and lowering the risk of NAFLD and T2D.

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