NCD Newsletter

Sep. 2021-Issue 01

FROM THE DESK OF EDITOR,

Dear Doctor,

Aprica Healthcare was established in 2011 with the dream to deliver innovations to healthcare for the ultimate betterment of society. It's been 10 years and we're one of the leading and specialty-oriented pharmaceutical companies in India, marketing different medicines to retail, wholesale, government, and institutional customers.

We are committed to provide the best quality products to our consumers. With a mindset of "Quality for All ", we aim to become trailblazing healthcare providers in the industry.

Today there is never ending flow of information available on the World Wide Web. It is quite difficult for busy clinicians to segregate such information. So to ease out everything we are presenting you the "NCD" Newsletter. NCD stands for Non Communicable Diseases. We are pleased to present the first monthly issue focusing on newer devices, product updates and ways of better living. Every month, it will be delivering the advancements in the field of non-communicable diseases.

From the next issue onwards, we are planning to incorporate challenging cases from the clinical perspectives. So we are inviting the case study from your side for pan India circulation. This will help the fellow doctors to have eagle eye approach for effective pharmacotherapy.

We are anticipating your feedback on the newsletter for the betterment of content selection and designing. Hoping your enthusiastic participation for upcoming issues.

From the desk of,
Editor : Dr. Amit Gajjar
APRICA HEALTHCARE LTD

WHAT IS NEW?

Medical devices:

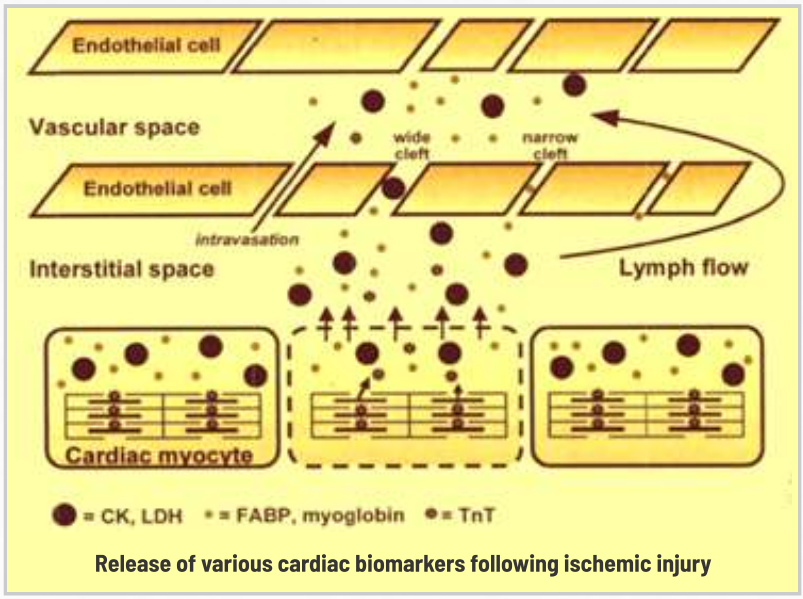
H-FABP Kit for Acute MI

Acute myocardial infarction (AMI) is a life-threatening event. Even with timely treatment, acute ischemic myocardial injury and ensuing ischemia reperfusion injury (IRI) can still be difficult issues to tackle. Apart from radiological and other auxiliary examinations, laboratory tests of applicable cardiac biomarkers are also necessary for early diagnosis and close monitoring.

H-FABP (Heart Type Fatty Acid Binding Protein), also known as mammary-derived growth inhibitor, is a protein that in humans is encoded by the FABP3 gene. H-FABP is involved in active fatty acid metabolism, where it transports fatty acids from the cell membrane to mitochondria for oxidation. These FABPs are believed to participate in the uptake, intracellular metabolism, and/or transport of long-chain polyunsaturated fatty acids (PUFAs).

Immunoreactivity of H-FABP was detected in both ventricles and atria, in many striated muscles, parietal cells of the stomach, renal epithelial cells, acinar and ductal cells of the breast, ductal cells of the salivary gland, corpus luteum, leydig cells of the testis, adipocytes, vascular endothelial cells, and terminally differentiated epithelia of the respiratory, intestinal, and urogenital tracts. H-FABP was not detected in old infarcts of the heart and necrotic cardiomyocytes. Even morphologically normal cardiomyocytes did not show H-FABP 1 h after acute ischemic lesions suggesting that these cardiomyocytes that appear to be apparently normal are in fact non-viable cells. Furthermore, PUFAs enhanced the expression of FABPs, and the detrimental effect of

saturated fatty acids was nullified by unsaturated fatty acids indicating that one of the functions of H-FABP could be to transport PUFAs to myocardial cells and thus preserve their integrity. This is supported by the observation that mice lacking H-FABP showed severe defect in utilization of PUFAs and heart

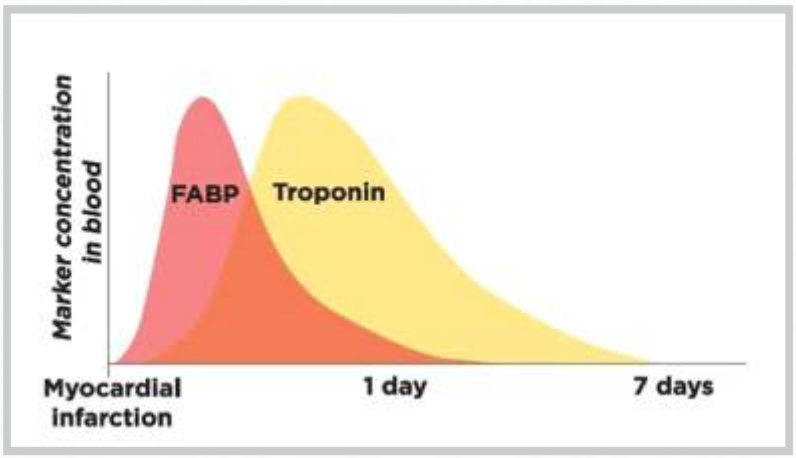


Release of various cardiac biomarkers following ischemic injury

failed to efficiently take up plasma PUFAs and use it as the main fuel. H-FABP deficiency also led to acute exercise intolerance and localized cardiac hypertrophy.

H-FABP is needed for cardiac intracellular lipid transport and fuel selection and thus, plays a major role in metabolic homeostasis. Thus, it is likely that release of H-FABP due to ischemia may further aggravate cardiomyocyte function and survival due to reduced or absent H-FABP that leads to inefficient transport PUFAs for use as fuel. In addition, those who have consumed increased amounts of saturated fatty acids and trans-fatty acids are more likely to be at increased risk of further aggravation of myocardial damage since saturated fatty acids and trans-fatty acids are toxic to myocardial cells. This may explain the benefit of consuming PUFAs since they have been shown to nullify the toxic actions of saturated fatty acids on myocardial cells.

During myocardial injury, the H-FABP level in serum is elevated rapidly, making it an ideal marker for myocardial infarction, and it is a useful prognostic marker in patients with proven acute coronary syndrome. Cardiac troponin T (cTnT) may not rise till 6 hr after the onset of symptoms and may have to be repeated within 8–12 hr after the onset of pain in order to confirm or negate the diagnosis.



H-FABP is released into the bloodstream within 30 minutes of a heart attack, whereas people who are currently admitted to hospital with chest pains may have to wait several hours for test results. Even the latest heart attack test to be adopted by the NHS, troponin, can take up to six hours to provide confirmation. H-FABP, conversely, is released from the heart during the early stages of a heart attack and because it is so small, it can be detected when the heart cells are being damaged, rather than at the stage when troponin would usually be detected – when cell death has already occurred. **The test can also be used to identify people who are at high risk of heart attack in the near future.**

If the H-FABP test is added to existing tests upon arrival at hospital, doctors could quickly and accurately rule out the 80% of chest pain patients who are not having a heart attack, allowing resources to be focused on those who are actually at high risk.

Currently in global market various manufacturers are coming up with the kit to qualitatively estimate H-FABP. This test can be completed within 20 minutes, enabling the emergency healthcare provider to identify Acute MI.
Costing of H-FABP kit is at par with current standard panel of Trop test. i.e. 500 INR per test.

- H-FABP is released into the bloodstream within 30 minutes of the heart attack.
- Even the latest heart attack test to be adopted by the NHS, troponin, can take up to six hours to provide confirmation.
- If the H-FABP test is added to existing tests upon arrival at hospital, doctors could quickly and accurately rule out the 80% of chest pain patients who are not having a heart attack, allowing resources to be focused on those who are actually at high risk at minimal costings.

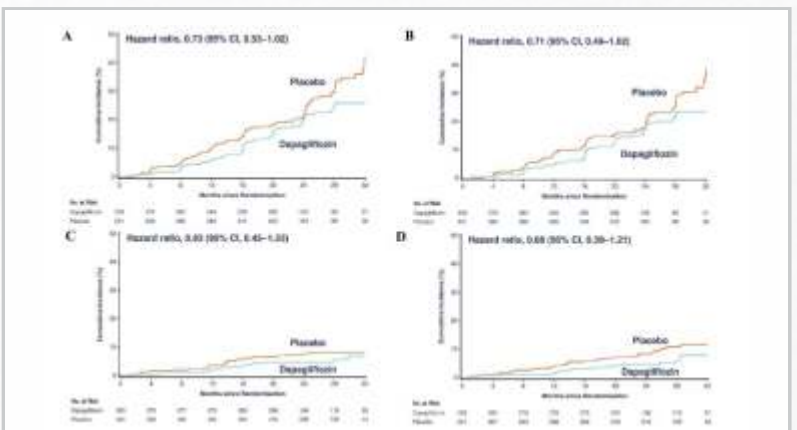
Reference: H-FABP kit, Product information sheet; K∞MARA Healthcare S.L.

PRODUCT UPDATE

Dapagliflozin is safe and effective in stage 4 chronic kidney disease as per DAPA-CKD findings

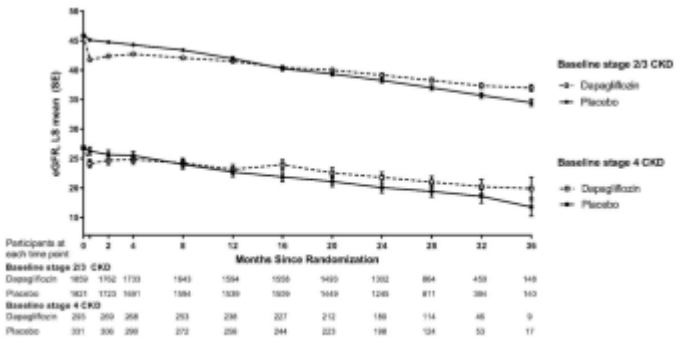
Dapagliflozin became the first SGLT2 inhibitor to receive approval for treatment of CKD in April 2021. The quoted study was a prespecified analysis designed to assess the efficacy and safety of dapagliflozin in patients with an eGFR less than 30 mL/min per 1.73m^2 at baseline.

While discussing the Data of the landmark DAPA-CKD trial, They have concluded that the effects of dapagliflozin in patients with advanced chronic kidney disease (CKD) were similar to those observed in patients with normal or moderately impaired kidney function. The results of dapagliflozin use were not associated with an increased rate of side effects and significant reductions in the incidence of reduced kidney function or death.



Safety Comparison between Dapagliflozin and Placebo

The effects were compared among 293 patients who received dapagliflozin and 331 patients who received placebo. Upon analysis, results suggested dapagliflozin was associated with a 27% reduction in risk of the primary endpoint and 29%, 17% and 32% reductions in the kidney, cardiovascular, and mortality endpoints, respectively, compared with those randomized to placebo.



eGFR vs time for patients enrolled with Dapagliflozin or Placebo

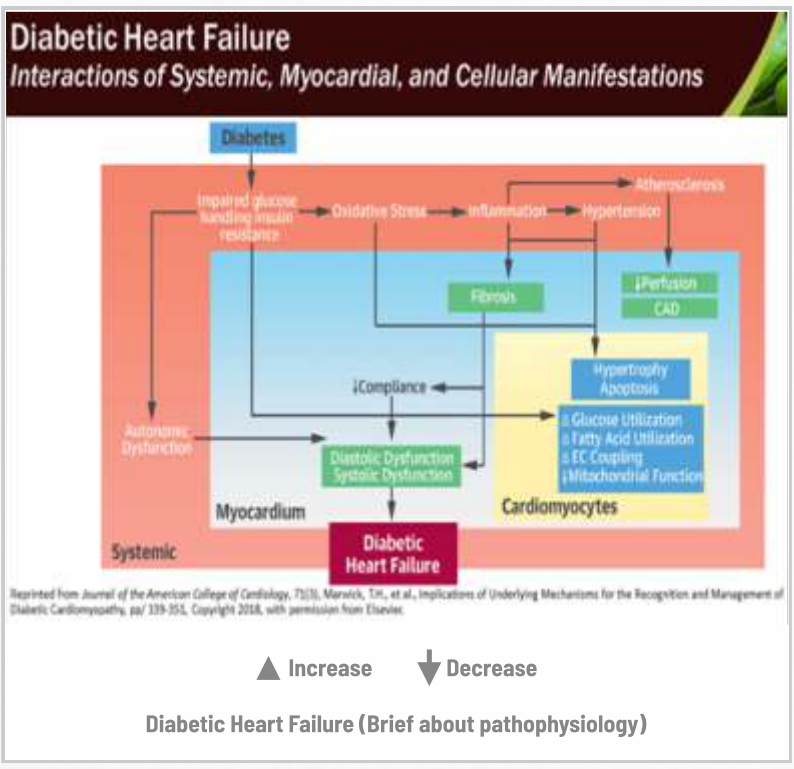
Further analysis indicated the eGFR slope declined by 2.5 mL/min per 1.73m^2 per year among those receiving dapagliflozin compared to 3.38 mL/min per 1.73m^2 per year among those receiving placebo.

- Among patients with stage 4 CKD and albuminuria, with and without type 2 diabetes, the effects of dapagliflozin on reducing the risks of major kidney and cardiovascular events and attenuating progressive loss of eGFR are consistent with those observed in the trial overall, with no evidence of increased risks.

Reference: Endocrinology Network, July 20, 2021 Patrick Campbell

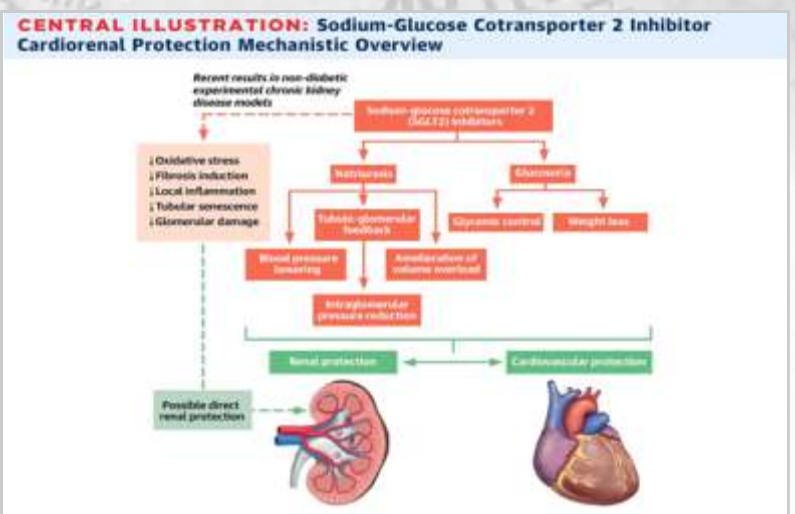
Dapagliflozin in Patients with Heart Failure and Reduced Ejection Fraction (DAPA-HF trial)

Patients with diabetes mellitus have more than 2 times, the risk for developing heart failure (HF; HF with reduced ejection fraction and HF with preserved ejection fraction). Cardiovascular outcomes, hospitalization, and prognosis are worse for patients with diabetes mellitus relative to those without. Beyond the structural and functional changes that characterize diabetic cardiomyopathy, a complex underlying, and interrelated pathophysiology exists. Despite the success of many commonly used antihyperglycemic therapies to lower hyperglycemia in type 2 diabetes mellitus the high prevalence of HF persists. This, therefore, raises the possibility that additional factors beyond glycaemia might contribute to the increased HF risk in diabetes mellitus.



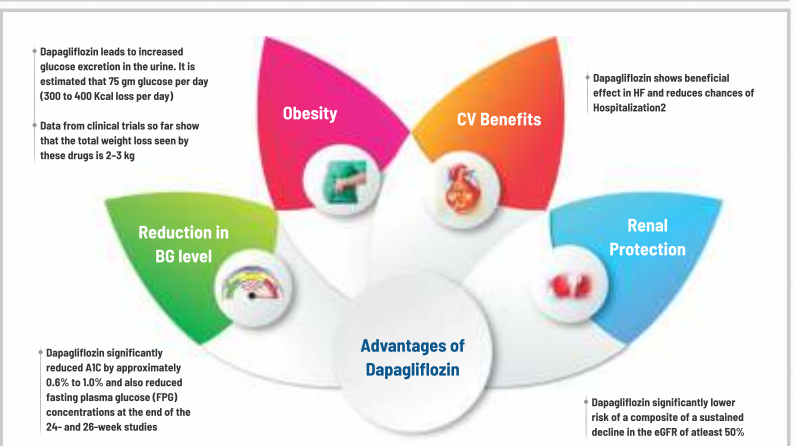
Diabetic Heart Failure (Brief about pathophysiology)

SGLT2 inhibitors are especially useful in patients with heart failure and comorbid type 2 diabetes (T2D) because they block the reabsorption of filtered glucose. Along with this they are causing natriuresis. Consequently reducing blood volume thereby reducing the risk of heart failure events. These 2 diseases are a common pairing in patients with one or the other.



Zelniker, T.A. et al. J Am Coll Cardiol. 2020;75(4):422-34.

Dapagliflozin is also associated with its pleiotropic effects (Additional effects than glucose lowering)



Pleiotropic effects (Additional effects than glucose lowering)

Dapagliflozin prevents worsening heart failure or cardiovascular death regardless of the presence or absence of diabetes.

Among patients with heart failure or with a reduced ejection fraction, the risk of worsening heart failure or death from cardiovascular causes was lower among those who received dapagliflozin than among those who received placebo, regardless of the presence or absence of diabetes.

- Dapagliflozin becomes the 1st SGLT2 Inhibitor in class to be triple indicated T2D, HF & CKD
- Dapagliflozin demonstrated unprecedented reduction in the risk of the composite of worsening of renal function, end-stage kidney disease and cardiovascular or renal death.
- USFDA has approved dapagliflozin for the treatment of chronic kidney disease in patients at risk of progression with and without type-2 diabetes.

Reference: Oyama K, Raz I, Cahn A, et al; European Heart Journal; August, 2021

DCGI approval results from the landmark Phase III DAPA-HF trial, which has proved that Dapagliflozin in addition to standard of care, reduced the risk of the composite outcome of cardiovascular death or the worsening of heart failure versus placebo by 26 per cent.

NEW DRUGS APPROVALS

Sr. No.	Name	Approval Date	Indication
1	Finerenone	7/9/2021	To reduce the risk of kidney and heart complications in chronic kidney disease associated with type 2 diabetes
2	Dasiglucagon	22/3/2021	To treat severe hypoglycemia
3	Vericiguat	19/1/2021	To mitigate the risk of cardiovascular death and hospitalization for chronic heart failure

LET'S BURN SOME CARBS

455 Cal
An hour of moderate cycling

190 Cal
20 Minutes of moderate cycling

The most easiest and enjoyable way to burn your carbohydrates is cycling. The feel of cool breeze while riding gives a boost of endorphins. After a ride, you'll experience a spike in neuro-chemicals such as serotonin and dopamine. Not only do they improve your mood, but this hit of endorphins can stimulate the same areas of the brain as a painkiller.

The health benefits of regular cycling:

- Increase cardiovascular fitness
- Increase muscle strength and flexibility
- Improve joint mobility
- Decrease stress level
- Improve posture and coordination
- Strengthen bones
- Decrease body fat levels
- Reduce anxiety and depression

FEEDBACK

Please provide your feedback by scanning QR code

Explore your surrounding areas and developments while burning calories

TOP BICYCLES TO LOOK FOR

Giant Escape 3 (INR 29,000)

Scott Metrix 10 (INR 44,000)

Cannonade Quick 5 (INR 44,600)

Ridley Cordis 2 (2018) (INR 28,500)