

## Role of Trimetazidine in PTCA and CABG

Reperfusion during revascularisation procedures often results in reperfusion damage<sup>1</sup>

## Nature of Reperfusion Injury<sup>1,2</sup>

- Arrhythmia
- Acceleration of necrosis in tissue that has already sustained lethal injury
- Unfavorable but reversible contractile and metabolic events
- Cell death in potentially viable tissue

## Causes of Reperfusion Injury<sup>3, 4</sup>

- Increased production of free radicals
- Inflammation release of polymorphonuclear leucocytes
- Calcium overload

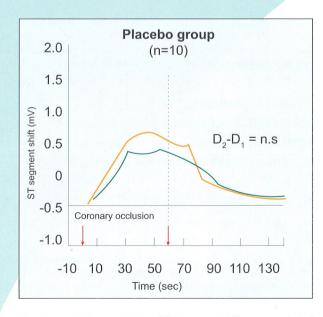
## Actions of Trimetazidine<sup>5</sup>

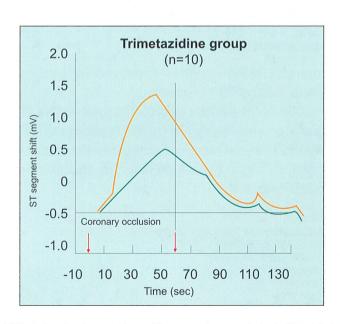
- Limits overproduction of free radicals
- Prevents infiltration of polymorphonuclear leucocytes
- Reduces calcium overload

## Clinical benefits of Trimetazidine

## Trimetazidine improves the outcome of PTCA6

Delays the onset and magnitude of ischemic response



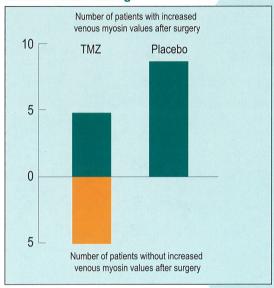


The change in the magnitude of ST segment shift, measured via the ic. ECG, in the placebo and trimetazidine-treated groups during balloon inflations  $D_1$  (Orange line, before drug administration) and  $D_2$  (Green line, after placebo or trimetazidine treatment).

# The vital addition that protects the heart

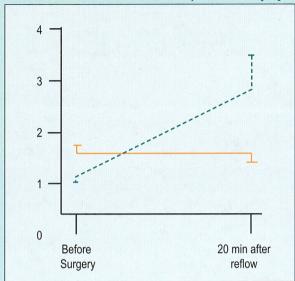
## Trimetazidine in CABG<sup>7</sup>

#### Limits cellular damage



Presence of myosin in the venous blood 4 hours after surgery

#### Reduces free radical-induced reperfusion injury



Malondialdehyde (MDA) levels measured in coronary sinus blood before surgery and 20 min after reflow (mean + SEM)

## Conclusion

# Trimetazidine is of potential use in revascularisation procedures

- Limits ischemia during Percutaneous Transluminal Coronary Angioplasty
- Reduces reperfusion damage during Coronary Artery Bypass Grafting

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