

# 1 TRAUMA

## APOPTOSIS

Caspase, Bax

## INNATE IMMUNE SYSTEM ACTIVATION

TLRs, ALARMINs/DAMPs Lymph

## CARDIOMYOCYTE GENE EXPRESSION & UPREGULATION

NFKB, IL-6, TNF $\alpha$

## OXIDATIVE & NITRATIVE ENZYME ACTIVITY

MPO, NADPH, iNOS form superoxide and Nitritive stress, free radical species, protein damage

## MYOCARDIAL LEUKOCYTE INFILTRATION

Adhesion molecules, Chemokines CINC-1, CINC-3, ICAM-1, MIP-2

## ANTI-APOPTOTIC FACTORS

Bcl-2

## CELL SIGNALLING PATHWAYS

MAPK, AKT

## SEX HORMONES

Oestrogen Receptors

## HEAT SHOCK PROTEINS

HSP-60 & HSP-90,  
HSF-1, HO-1, HSP-70,  
HSP-27 & the HSP  
 $\alpha\beta$ -crystallin

**CARDIO  
PROTECTORS**

**CARDIO  
STRESSORS**

## 2 IMBALANCE OF CARDIO-STRESSORS VS CARDIO-PROTECTORS

## 3 MYOCARDIAL DYSFUNCTION