Myocardial infarction accelerates atherosclerosis

Dutta et al.

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Background

Myocardial infarction

- 12 million deaths annually worldwide
- Survival rate after first MCI: 90%
- 54% myocardial ischemia-rate within 1 year
- Leukocytosis negative predictor

www.medscape.com
Background

Atherosclerosis
Background

Atherosclerosis
Hypothesis

Acute MCI accelerates atherosclerosis

– Acute inflammatory event

– High re-infarction rate after MCI

Methods

• LAD ligation in wild-type/APO E\textsuperscript{-/-} mice
• Hybrid fluorescence molecular tomography
• FACS, Histology
• Intravital microscopy

Results

Results
Results

Results

Results
Results

Results

Results

Heart failure
Anxiety
Pain

SNS activation
Noradrenalin
β₂-Adrenoceptor

Progenitor release from BM niche

Plaque rupture
Increased extramedullary monocytopoiesis

MI
Discussion

• Acute MCI increases inflammation in pre-existing atherosclerotic plaque
• Extramedullary monocytosis in the spleen increased and altered after MCI
• SNS involved in recruitment of progenitor cells after MCI – no additive effect with splenectomy
Thank you for your attention!