PREOPERATIVE PHARMACOLOGICAL CONDITIONING INFLUENCES CLINICAL AND MOLECULAR OUTCOME OF ISCHEMIA/REPERFUSION INJURY OF THE SPINAL CORD AFTER THORACOAORTIC CROSSCLAMPING IN MICE

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Disclosure

Speaker name:
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I have the following potential conflicts of interest to report:

☐ Consulting
☐ Employment in industry
☐ Stockholder of a healthcare company
☐ Owner of a healthcare company
☐ Other(s)

☒ I do not have any potential conflict of interest
Background

-thoracoaortal-crossclamping:
  - e.g. repair of aneurysm/dissection
  - represents ischemia/reperfusion sequence

early onset paraplegia
  - directly post-OP
  - reason: acute ischemia

late onset paraplegia
  - later manifestation
  - reason: stress of ER?

oxidative stress

Ca²⁺- loss

unfolded protein

ischemia

rhEPO
cEPO-FC

Unfolded Protein Response (UPR)

(DeGracia 2004)
Design

Operative setting

Clamping aorta and LSA

Laserimager

Preclamping

Clamping ⇧

Postclamping ⇧
Results

Hematoxylin-Eosin staining and scoring

Significantly decreased necrosis in the Epo and cEpo-Fc groups in comparison to the control group.

criteria of necrosis:
1) cystic transformation of white matter
2) central necrosis in grey matter
3) loss of motoneurons
4) focal parenchymal necrosis

ranking of criteria:
1) none → 0 Pkt.
2) slightly → 1 Pkt.
3) intermediate → 2 Pkt.
4) severe → 3 Pkt.

grade of necrosis:
1) no necrosis → 0 Pkt.
2) light necrosis → 1-3 Pkt.
3) moderate necrosis → 4-6 Pkt.
4) severe necrosis → 7-9 Pkt.
5) most severe necrosis → 10-12 Pkt.
Native Epo and cEpo-Fc can significantly improve the clinical/histological outcome of mice (C57BL/6J). The molecular mechanisms underlying these effects are being further evaluated.