Do N(D)OACs Have Anti-Inflammatory Effects

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Background

• DVT ~ Significant morbidity and mortality
• 29-60% risk of PTS from persistent venous obstruction and valvular reflux
  – Acute thrombosis
  – Inflammatory mediators act on vein wall
  – Venous recanalization

Factor Xa Inhibition

• Preclinical data suggests a protective effect of factor Xa or thrombin inhibition on endothelial function and the progression of atherosclerosis
  – Block expression of pro-inflammatory cytokines (restenosis following balloon angioplasty)
  – Downregulation of thrombin-mediated pro-inflammatory cytokine expression

No Disclosures

Moaveni et al, JVS 2008
Joo et al, Biol Pharm Bull, 2009
Ragosta et al, Circulation, 1994
Laurent et al, Blood (abstract), 2009.
Research Design

- Mice received treatment on closure of laparotomy for 2 days (acute) and 14 days (chronic)

- Three Treatment Groups (N=8)
  - Saline (0.1ml) (gavage and SQ)
  - Enoxaparin 6mg/kg Qday (SQ)
  - Apixaban 30mg/kg Qday (gavage)

IL-6 (Pro-inflammatory)

Monocyte Chemotactic Protein (Pro-inflammatory)

Pro-inflammatory – TNFα and Murine IL-8 homologue KC

IL-10 (Anti-inflammatory)
Conclusions

- Apixaban is less effective in reducing thrombus burden than Enoxaparin at a 2 day time point in this murine model of DVT
- Apixaban does not offer equivalent anti-inflammatory effects to Enoxaparin
- Clinical translation – Should Apixaban be bridged with a 5-7 day course of Enoxaparin?

Thank You

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