

Abstract Submission for the 10th World Congress on Inflammation

THEME: Inflammatory processes in diseases of kidney and genitourinary tract

INFLAMMATION2011-TBD

EVALUATION OF PRO-RESOLVING MEDIATORS DURING URINARY BLADDER INFLAMMATION: EFFECT OF ASPIRIN, IBUPROFEN AND MORPHINE

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Abstract:

Introduction: The objective of this study was to highlight the effects of aspirin, ibuprofen and morphine on the production of pro-resolving lipid mediators during a cyclophosphamide (CYP)-induced bladder inflammation.

Methods: For this, female rats were dosed with aspirin, ibuprofen, morphine or vehicle prior to a single injection of CYP. Urines were then collected over 4h and mediators analyzed using a liquid chromatography-tandem mass spectrometry (LC-MS/MS) methodology to quantitatively evaluate bioactive lipids production in urine.

Results: During these experiments, we showed that CYP induced the production of lipid mediators derived from the cyclooxygenase (COX) and lipoxygenases (LOX) pathways. Moreover, CYP treatment induced bladder pain, which was inhibited by aspirin, ibuprofen and morphine treatments. The use of aspirin and ibuprofen completely abrogated the mediators depending on COX pathways while morphine had no effects on those. On the other hand, aspirin boosted the LOX pathways and the production of the precursors of resolvins, maresin and protectins. In contrast, the use of ibuprofen and morphine inhibited the production of these same precursors.

Conclusions: Taking together the results suggest that aspirin may act on bladder pain through the induction of key pro-resolving mediators, while ibuprofen and morphine may promote the desensitization of bladder nociceptors by other pathways.

Disclosure of Interest: None Declared