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Contact/Presenting Author: A. Fernandez-Bustamante

Department/Institution: Anesthesiology, Johns Hopkins University

Address: 600 N Wolfe St, Nelson Tower 711

City/State/Zip/Country: Baltimore, MD, 21287, United States

Phone: 410-955-3640 **Fax:** **E-mail:** aferna10@jhmi.edu

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Title: CHARACTERIZATION OF BRONCHOALVEOLAR FLUID (BALF) AFTER TREATMENT WITH rSP-C SURFACTANT IN SEVERE OVINE LPS-INDUCED ACUTE LUNG INJURY (ALI)

A. Fernandez-Bustamante, MD, PhD¹, R.B. Easley, MD¹, D. Mulreany, BS¹, M.K. Fuld, BS¹, J.F. Lewis, MD², F.J.H. Taut, MD³ and B.A. Simon, MD, PhD¹. ¹Johns Hopkins Medical Institutions, Baltimore, MD, United States; ²University of Western Ontario, London, Ontario, Canada and ³ALTANA Pharma AG, Konstanz, Germany.

Recent findings suggest potential immunomodulatory effects of surfactant proteins in the lung. The goal of this study was to analyze the effect of instilling rSP-C surfactant (Venticute®) on the BALF composition of surfactant and inflammatory mediators in a sheep model of sepsis-related ALI. Methods: 13 anesthetized, mechanically ventilated (Vt 10 ml/kg, f 20/min, 5 PEEP, FiO2 1.0) adult sheep had E.coli LPS (Sigma L4005) infused at 10mcg/kg/h until severe ALI criteria were met. Sheep then received either Venticute® (100mg phospholipids/kg diluted in 4ml/kg normal saline)(S group) or same volume of air (NS group) instilled in divided doses. Animals were ventilated prone for 3h. Serum collection and BAL at four lung locations were performed at baseline (B), injury (I) and 3h post-treatment (T) for concentration of surfactant, surfactant components (large and small aggregates) and inflammatory mediators (IL-6 and IL-1b). Results: Oxygenation was significantly higher in the S vs. the NS group during the 3h. BALF after treatment in S sheep showed a significantly higher total surfactant concentration compared to NS sheep. Serum and BALF IL-6 levels progressively increased during experiment. IL-1b concentration increased from B to I in serum and BALF in both groups, decreasing at T in serum but not in BALF. Both cytokine levels were lower in the serum and BALF of S vs. NS animals at T time point. No lung regional differences in BALF composition were found. Conclusions: rSP-C surfactant treatment improved oxygenation, increased surfactant BALF concentration and may be associated with decreased lung and systemic inflammation.

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I hereby confirm the Disclosure information above is accurate at the time of this submission. I acknowledge that keying in my name and date of completion below indicates assent to this agreement and is equivalent to my signature.

Presenter First Name: Ana

Presenter Last Name: Fernandez-Bustamante

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