

BACKGROUND

- Acute Respiratory Distress Syndrome (ARDS) is a proinflammatory acute lung injury that leads to noncardiac pulmonary edema
- Models of ARDS, such as oleic acid (OA) induced damage, can be used to study ARDS in animals
 - Fast model, induces damage in endothelial cells and epithelial cells.
 - Actives alveolar macrophages leading to inflammation through inflammatory mediator production

Aims and Hypothesis

- Determine whether the oleic acid model of ARDS causes cytokine changes in addition to clinical ARDS
- In a pediatric swine model of oleic acid ARDS, pro-inflammatory cytokines will increase

<u>Methods</u>

- Pigs 23±3kg were sedated, intubated, and ventilated
- After sedation and ventilation, oleic acid (OA) was continuously injected until ARDS was achieved
- ARDS was defined by PALICC definition
- Blood samples were collected immediately before injection and when P/F ratio was less then 300, indicating ARDS
- RT-qPCR was used to analyze blood sample
- Wilcoxon t-test analyzed significance

IFN-y and IL-6 response decreases at onset of acute respiratory distress syndrome in the oleic acid pediatric swine model

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• IFN-y and IL-6 significantly decreased at the initiation of ARDS • Future studies include studying BAL cytokines and extending the timeline of this study

FIGURES







IFINE	-g [N	NF-a I	L-17	IL-10	IL-6	1L-8
Average 0.	.7094	1.1075	1.3336	1.2766	0.4892	0.9576
sd 0.	.3482	1.0555	0.8080	0.9538	0.2926	0.7379
P-Value 0.	.0041 (0.6986	0.1305	0.2788	6E-06	0.8156

ADDITIONAL KEY INFORMATION

Future Directions:

- Expand

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17 animals were studied

INF-y and IL-6 significantly decreased from baseline levels

Further studies are required to better

characterize cytokine activity in the OA-swine

Study cytokine levels in bronchoalveolar lavage fluid

timeline characterize to cytokines hours to days after insult