Various prognostic factors such as history of diabetes, alcoholism, and presence of hypoalbuminemia, coagulopathy, sepsis and lactic acidosis were taken into account. Calculations were made in regards to the Lung Injury Predictive Score (LIPS) as determined by Chest Roentgenogram score, Hypoxemia Score, PEEP Score and Compliance score. The LIPS score was calculated for projecting the severity of ARDS. The use of statins on various outcome measures was also observed.

**Results** A total of 46 patients were treated in the ICU for ARDS. The number of ventilator days averaged from 5–35 days. The incidence of predisposing conditions as well as risk modifiers was correlated with the LIPS score. All of these patients were on ARDS net protocol and received intravenous antibiotics. Statistical analysis revealed a favourable impact of prone positioning with steroids on the mortality, duration of ICU stay and ventilator days. A significant difference in the LIPS score was noted in patients receiving IV steroids and prone positioning on day 2. Use of statins also influenced the duration of ICU stay and a significant impact on the mortality of this cohort of patients.

**Conclusions** Prone positioning is an effective adjunct intervention in conjunction with intravenous steroids for treating severe ARDS. It is a valid option for patients with refractory ARDS to conventional treatment. More studies need to be done to validate the impact of statins on different outcome measures in the ICU.

**Airway inflammation and infections**

**S78 PHENOTYPES OF INDUCED SPUTUM IN DIFFICULT TO TREAT ASTHMA**

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**Introduction and Objectives** The clinical value of repeated induced sputum tests to monitor airway inflammation in children with severe asthma is contentious. In adult patients with severe asthma a management based on sputum eosinophil counts results in a reduction of exacerbations and fewer hospital admissions (Green R et al, Lancet 2002). This has not been shown in children. Several inflammatory phenotypes are described but clinical management strategies based on these have largely been unsuccessful. It has been suggested that the inflammatory phenotypes in the sputum are unstable over time (Fleming et al, Thorax 2012). We reviewed the results of induced sputum tests done as part of our severe asthma clinic to determine stability of inflammatory phenotypes in our patients.

**Methods** We reviewed all sputum induction results for children with a diagnosis of asthma who underwent inductions between April 2008 and June 2012 at our centre. Samples were processes using our standard protocol (Pin et al, Thorax 1992).

Samples were classified as eosinophilic (>2.5% eosinophils and <2.5% neutrophils), neutrophilic (>54% neutrophils and <2.5% Eos); mixed granulocytic (>2.5% eosinophils, >54% neutrophils); or paucigranulocytic (<2.5% eosinophils, <54% neutrophils) as previously suggested.

**Results** 34 patients, 19 males and 15 females, with a BTS of 3 to 5 had a total of 86 inductions. 22 patients had 2 inductions and the rest had between 3 and 5 inductions.

18 of the 34 patients had a eosinophilic profile on their first induction and 24 of the 34 patients had a eosinophilic profile in at least one sample. 29 of the 34 patients had >2.5% eosinophils (eosinophilic or mixed profile) in at least one sample. Of the remaining five who never had >2.5% eosinophils, four had a neutrophilic profile and the remaining child had a persistent paucigranulocytic profile.

Using the above classification 25 out of the 34 patients switched phenotype at least once in the duration of the study.

**Conclusions** There is no treatment based on the neutrophilic phenotype classification therefore the presence and percentage of eosinophils present appears to be the most useful information gained from sputum induction. Based on our data and that of others, classification into several inflammatory phenotypes does not appear clinically useful.