liver function tests. Patients with central line placement and hepa-
rin exposure were associated strongly with mild thrombocytope-
nia (p<0.0001). Drug therapies that were correlated with
thrombocytopenia included Heparin, Protonix, Lasix, Ativan and
Zofran and antibiotics such as Vancomycin, Cephalosporins and
Levaquin.

Conclusion Drug regimens should be evaluated daily for mini-
imization of adverse drug events including thrombocytopenia. Once
the diagnosis is suspected, clinicians should identify the medication
and/or risk factors causing secondary thrombocytopenia to assess
the timeline of development. Co morbidity associated with throm-
boctopenia was sepsis syndrome, liver disorder, alcoholism and
atrial fibrillation. Medications commonly associated with drug-
induced thrombocytopenia include glycoprotein IIb/IIIa inhibitors,
cinchona alkaloids, antibiotics, anticonvulsants, and heparin.
Thrombocytopenia generally resolved in most patients with critical
management of the disease and discontinuation of the offending
medication.

S75 HIGH DOSE VITAMIN D SUPPLEMENTATION IMPROVES EXTRAVASCULAR LUNG WATER INDEX AND IN-VIVO T REG AND LL37 RESPONSES POST-OSTEOSCAPHOTOMY
doi:10.1136/thoraxjnl-2012-202678.081

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Acute Lung Injury occurs in around 25% of patients post 2 stage
osteoarthropathy. We have previously shown that levels of 25-OH
vitamin D are low in these patients and that those patients with the
lowest levels of vitamin D are more likely to develop Acute Lung
Injury post-operatively. In vitro, vitamin D has been shown to pro-
mote the differentiation of regulatory T cells (Treg) and the expres-
sion of LL37 (cathelicidin), an antimicrobial peptide.

We have given 13 patients a one-off high dose vitamin D supple-
mentation 3–14 days prior to osteoscaphtomy. Numbers of circulating
regulatory T cells were analysed both pre- and post-supplementation.
Plasma levels of LL37 were measured by ELISA. Extravascular Lung
Water Index (EVLWi) was measured pre-operatively, post-opera-
tively and on the day following surgery. Changes in LL37 and EVLWi
were compared with results from a cohort of patients (n=50) who
had not been supplemented.

Pre-operative vitamin D levels between the two groups were sig-
nificantly different. The proportion of CD3+CD4+ T cells which
were CD25+CD127FoxP3+ increased post vitamin D supple-
mentation (median pre vitamin D=5.8, median post vitamin
D=7.3, p=0.028). Whilst levels of LL37 decreased post-operatively
in the cohort who had not received vitamin D, levels were main-
tained in supplemented patients. Post-operative EVLWi measured
lower than pre-operative values in patients receiving vitamin D
supplementation. This contrasts with patients who did not receive
vitamin D supplementation in whom an increase in EVLWi was
seen. This difference persisted on post-operative day 1, with a net
increase being seen in patients who did not receive vitamin D and a
net decrease in those who did (see table).

Conclusions A stat high dose vitamin D supplement restored vita-
moin D levels in the week before osteoscaphtomy. This was associ-
ated with elevated circulating Treg cells in vivo and an increase in
post-operative plasma LL37 expression suggesting the vitamin D
supplementation was biologically active.

Patients receiving vitamin D had no perioperative increase in
extravascular lung water compared to our historical cohort suggest-
ing that vitamin D protects against alveolar epithelial damage per-
haps in part due to effects on circulating Treg cells and anti-microbial
peptide production.

Abstract S75 Table 1 Effects of Vitamin D supplementation on median values of Vitamin D, EVLWi and LL37

<table>
<thead>
<tr>
<th>Vitamin D supplemenation</th>
<th>No Vitamin D supplemenation</th>
<th>p value (Mann-Whitney U test)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25-OH Vitamin D level</td>
<td>76 nmol/L</td>
<td>25 nmol/L</td>
</tr>
<tr>
<td>Change in EVLWi 00 post-op</td>
<td>–1.0</td>
<td>2.0</td>
</tr>
<tr>
<td>Change in EVLWi 01 post-op</td>
<td>–1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>% change in plasma LL37 as proportion of total protein post-op</td>
<td>10.9</td>
<td>-17.8</td>
</tr>
</tbody>
</table>

S76 PROTEOLYTIC CLEAVAGE OF ELAFIN BY 20S PROTEASOME MAY CONTRIBUTE TO INFLAMMATION IN ACUTE LUNG INJURY
doi:10.1136/thoraxjnl-2012-202678.082

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The Aim of this study was to characterise temporal changes in
elafin concentration in patients with acute lung injury (ALI) and to
evaluate whether a decrease in elafin levels is due to elevated pro-
estase activity. Previous work has shown that unregulated protease
activity can cause proteolytic cleavage of elafin, impairing the
innate immune function of the protein. Bronchoalveolar lavage
fluid (BALF) was obtained from patients with ALI within 48 hours
of onset of ALI (day 0), at day 3 and at day 7. Elafin levels were
quantified by ELISA Elafin susceptibility to proteolytic cleavage by
ALI BALF was assessed by Western blot and by HPLC-Mass Spec-
trometry. Elafin levels were found to be significantly increased at
the onset of ALI compared to healthy volunteers and fell signifi-
cantly by day 7 compared to day 0. In contrast, levels of secretory
leukocyte proteinase inhibitor (SLPI) did not decrease over time. This
decrease in elafin was due to cleavage by the 20S proteasome which
was significantly increased in ALI BALF. Incubation of ALI BALF
with the proteasome inhibitor epoxomicin confirmed that 20S pro-
teasome protease activity was responsible for proteolytic cleavage
of elafin resulting in diminished anti-elastase activity. In addition,
free neutrophil elastase (NE) activity significantly increased in ALI
BALF from day 0 to day 7. In conclusion, elafin concentrations
decrease within the pulmonary compartment over the course of ALI
as a result of proteolytic degradation. This loss of elafin may predis-
pose, in part, to excessive inflammation in ALI.

S77 PRONE POSITIONING AND INTRAVENOUS STEROIDS FOR THE MANAGEMENT OF SEVERE ARDS
doi:10.1136/thoraxjnl-2012-202678.083

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Introduction Prone positioning and intravenous steroids repre-
sents a treatment option in patients with severe ARDS because
most of the clinical manifestations in ARDS is secondary to excess
fluid in the interstitium and alveoli and presence of inflammatory
cells in the fluid.

Objective To assess the impact of prone positioning and steroids in
severe ARDS and to assess and identify prognostic factors and
potential predictors of mortality in ARDS patients.

Methods This is a retrospective study of 46 patients with severe
ARDS from 2009–2011. The patient charts were reviewed and the
impact of prone positioning and steroids was observed on severe
ARDS patients. The primary outcome measured were ICU length of
stay, number of ventilator days and 30 day mortality.
S75 High Dose Vitamin D Supplementation Improves Extravascular Lung Water Index and In-Vivo Treg and LL37 Responses Post-Oesophagectomy
RCA Dancer, D Parekh, AR Martineau, GD Perkins and DR Thickett

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