

different conditions. Using this breath collection method, there is no role for the use of breath H₂S or HCN in the diagnosis or monitoring of pneumonia in critical illness.

Abstract P146 Table 1. Causes of pulmonary infiltrates as determined by clinical factors, radiological and microbiological results, and initial breath volatile concentrations for each condition.

Cause of pulmonary infiltrates	Number of patients (%)	Median H ₂ S concentration (range) (ppb)	Median HCN concentration (range) (ppb)
Pneumonia	12 (43)	1.18 (0.61–3.47)	1.13 (0.50–1.41)
Pulmonary oedema	6 (21)	1.32 (0.30–2.57)	1.09 (0.42–3.87)
Aspiration lung injury	4 (14)	1.31 (1.09–1.54)	0.85 (0.63–2.73)
Atelectasis	3 (11)	0.74 (0.42–2.51)	1.57 (0.47–10.11)
ARDS (cause other than pneumonia)	2 (7)	0.76 (0.54–0.98)	0.62 (0.50–0.75)
Other	1 (4)	0.22	0.42

P147 CURRENT SMOKERS FACE INCREASED RISK OF ACUTE LUNG INJURY POST OESOPHAGECTOMY COMPARED TO FORMER SMOKERS- IMPLICATIONS FOR THERAPY AND TRIAL DESIGN?

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Introduction Patients undergoing oesophagectomy have ~25% risk of developing post-operative Acute Lung Injury (ALI). A recent meta-analysis showed that smoking cessation prior to an operation reduces the risk of respiratory complications [1]. We hypothesised that current smokers would have an increased risk of ALI post-oesophagectomy compared with former smokers.

Methods We analysed data from 14 current smokers and 37 former smokers recruited to the translational sub-study of the BALTI prevention trial. Extravascular Lung Water Index (EVLWI) and Pulmonary Vascular Permeability Index (PVPI) were measured using PICCO. Plasma and Bronchoalveolar lavage fluid (BALF) cytokine levels were measured by ELISA.

Results Current smokers were significantly younger and had a lower BMI than former smokers. Current smokers were more likely to develop post-operative ALI which required ventilation but there was no difference in the rate of respiratory infection. PVPI was significantly higher immediately post op and on day 1 post op and EVLWI was significantly higher on day 1 post op in current smokers (see table).

Plasma levels of FAS ligand were significantly lower in current smokers pre-op, post-op and on day 1 post-op. Pre-op plasma levels of sICAM1 were significantly higher in current smokers but there was no difference in post-op levels. Plasma levels of IL-17 were lower pre-op, post-op and on day 1, although only the post-op difference reached significance. In BAL, levels of VEGF were significantly lower and levels of IL1ra and TNFR1 were significantly higher in current smokers (see table).

Conclusion Current smokers have a higher risk of Acute Lung Injury following oesophagectomy than former smokers. This finding is supported by higher post-operative levels of extravascular lung water and pulmonary vascular permeability and differences in both plasma and BAL cytokines in current smokers.

Our data highlights the importance of encouraging patients to stop smoking prior to major surgery as well as the need to control for smoking history in trials aiming to ameliorate lung injury in this patient group.

REFERENCES

1. Wong, J. *et al.* Short-term preoperative smoking cessation and postoperative complications: a systematic review and meta-analysis. *Can J Anaesth*, 2012. 59(3): 268–79

Abstract P147 Table 1. Differences between current smokers and former smokers undergoing oesophagectomy. Data is expressed as median values except where specified.

	Current Smokers (n = 14)	Former Smokers (n = 37)	P-value	
Age (Years)	48	65	<0.001	
BMI (kg/m ²)	22	26	0.002	
Developed ALI - n (%)	6 (43)	6 (16)	0.045	
Developed respiratory infection - n (%)	5 (35)	12 (32)	0.824	
EVLWI (ml/kg)	Pre-op	8.3	7.8	0.520
	Post-op	11.0	9.3	0.191
	Day 1	9.8	7.9	0.040
PVPI	Pre-op	2.13	1.74	0.151
	Post-op	2.43	1.97	0.050
	Day 1	2.09	1.69	0.008
Fas Ligand (pg/ml)	Pre-op	21.85	36.78	0.001
	Post-op	17.62	30.73	0.001
	Day 1	9.05	18.38	<0.001
sICAM-1 (ng/ml)	Pre-op	103.52	56.95	0.005
	Post-op	51.38	43.01	0.199
	Day 1	100.38	88.00	0.226
IL-17A (pg/ml)	Pre-op	8.42	55.66	0.088
	Post-op	2.64	36.84	0.043
	Day 1	8.26	83.57	0.084
VEGF (pg/ml)	BAL	94.05	153.40	0.016
IL1ra (pg/ml)	BAL	50.99	9.83	0.007
sTNFR1 (pg/ml)	BAL	270.5	168.5	0.042

P148 ASPIRIN THERAPY IS ASSOCIATED WITH REDUCED MORTALITY IN PATIENTS WITH ACUTE LUNG INJURY

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Introduction Platelet activation has a role in the pathogenesis of ALI. Observational data suggests aspirin treatment may prevent the development of ALI in critically ill patients. However, it is unknown if aspirin usage alters outcomes in patients with established ALI.

Methods All patients with ALI were identified prospectively in a single large regional medical and surgical ICU between December 2010 and July 2012. Demographic, clinical, and laboratory variables were recorded. Aspirin usage, both pre-hospital and during Intensive Care Unit (ICU) stay, was included. The primary outcome was ICU mortality. We used univariate and multivariate analyses to assess the impact of these variables on ICU mortality.

Results Two hundred and two patients with ALI were included. 56 (28%) of these received aspirin either pre-hospital, in ICU,