Polymorphisms of surfactant proteins –A and –D and the incidence of ventilator associated pneumonia

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Surfactant protein (SP) -A and SP-D may have a role in the development and outcome from community acquired (CAP) and ventilator associated pneumonia (VAP) in the critically ill due to the effects of these proteins on the innate immune system and clearance of bacteria from the lung. Polymorphisms in the SP-A and SP-D genes may influence expression and or function of SP-A/SP-D mRNA and/or proteins and hence development, disease progression and/or outcome from pneumonia. We therefore determined the allele frequency of selected polymorphisms in SP-A and SP-D genes in critically ill patients with and without pneumonia.

In total 197 patients were recruited of which 115 did not have VAP or CAP and 82 fulfilled the predefined VAP criteria. Results of the allele frequencies are given in table 1. Only one variant reached statistical significance but this was a relatively rare allele and the predefined Hardy Weinberg equilibrium was not met.

We conclude that in our ICU patient population there was no apparent association of polymorphisms of surfactant proteins with the appearance of pneumonia.

Table 1. Allele frequencies of the various surfactant protein polymorphisms studied.

rs721917							
	GG	GA	AA	G	A	χ^2	P
No VAP	0.374	0.475	0.151	0.64	0.36	3.52	NS
VAP	0.333	0.488	0.179	0.57	0.43	0.02	NS
rs2243639							
	CC	CT	TT	C	T	χ^2	P
No VAP	0.226	0.499	0.275	0.51	0.49	1.97	NS
VAP	0.272	0.499	0.229	0.49	0.51	1.79	NS
rs3088308							
	AA	AT	TT	A	T	χ^2	P
No VAP	0.887	0.11	0.003	0.41	0.94	0.06	NS
VAP	0.765	0.219	0.016	0.12	0.88	1.43	NS
rs1059046							
	AA	AC	CC	A	C	χ^2	P
No VAP	0.261	0.5	0.239	0.63	0.37	39.51	0.001
VAP	0.56	0.37	0.061	0.77	0.23	0.81	NS

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