

## Supplemental Material for

### Benefits and risks of bronchoalveolar lavage in severe asthma in children

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**e-Table 1: Sedation doses per age and weight**

	<b>Midazolam</b>	<b>Atropine</b>
< 30 kgs and/or < 5 years	0.3 mg/kg IR	0.02 mg/kg IR
> 30 kgs and/or > 5 years	0.1 mg/kg (max 2.5 mg per dose), max 3 doses	0.02 mg/kg IV

IR, intrarectal; IV, intravenous

**e-Table 2: Bronchoscopy macroscopic findings**

	<b>Non-BAL group (n = 96)</b>	<b>BAL group (n = 107)</b>	<b>n</b>	<b>p</b>
Normal	23 (24%)	5 (4,7%)	28	<0.001
Inflammation	48 (50%)	99 (93%)	147	<0.001
Secretions				<0.001
Presence	75 (78%)	103 (96%)	178	
Fluid and light	64 (67%)	93 (87%)	157	
Thick or purulent	11 (11%)	10 (9,3%)	21	
Anatomical abnormality/variation	51 (53%)	30 (28%)	81	<0.001
Tracheal or bronchial malacia	42 (44%)	29 (27%)	71	0.013
Bronchial partial atresia*	5 (5%)	1 (1%)	6	NA
Unusual bronchial segmentation	3 (3%)	0	3	NA
Subglottic nodule	1 (1%)	0	1	NA

**e-Table 3: Factors that may influence total cellularity**

	<b>Coefficients</b>	<b>p</b>
< 3 years	94.1 [9.48; 179]	<b>0.03</b>
> 6 years	-69.9 [-148; 7.83]	0.077
Viral infection	51.1 [-14.1; 116]	0.12
Bacterial infection	-74.1 [-163; 14.9]	0.1
Atopy	-59.2 [-162; 43.7]	0.25

**e-Table 4: Viral infections according to age and group**

	< 3 years			3-6 years			> 6 years		
	Non-BAL group (bronchial aspiration) (n = 72)	BAL group (n = 42)	p	Non-BAL group (bronchial aspiration) (n = 16)	BAL group (n = 26)	p	Non-BAL group (bronchial aspiration) (n = 5)	BAL group (n = 39)	p
<b>≥ 1 infection</b>	41 (57%)	23 (55%)	0.82	7 (44%)	8 (31%)	0.39	2 (40%)	10 (26%)	0.6
<i>Adenovirus</i>	15 (21%)	2 (4.8%)	<b>0.02</b>	3 (19%)	0 (0%)	<b>0.049</b>	0 (0%)	1 (2.6%)	1
<i>Enterovirus</i>	8 (11%)	4 (9.5%)	1	0 (0%)	1 (3.8%)	1	1 (20%)	0 (0%)	0.11
<i>Parainfluenza virus</i>	4 (5.6%)	1 (2.4%)	0.65	1 (6.2%)	0 (0%)	0.38	0 (0%)	1 (2.6%)	1
<i>Metapneumovirus</i>	4 (5.6%)	0 (0%)	0.29	0 (0%)	0 (0%)	1	0 (0%)	0 (0%)	1
<i>Influenza virus*</i>	6 (10%)	0 (0%)	0.079	0 (0%)	0 (0%)	1	0 (0%)	2 (5.3%)	1
<i>Respiratory syncytial virus*</i>	5 (8.3%)	1 (2.4%)	0.4	1 (8.3%)	0 (0%)	0.32	0 (0%)	1 (2.6%)	1
<i>Rhinovirus**</i>	9 (53%)	14 (34%)	0.18	2 (50%)	7 (27%)	0.56	1 (50%)	4 (11%)	0.24
<i>Bocavirus**</i>	1 (5.9%)	6 (15%)	0.66	3 (75%)	0 (0%)	<b>&lt;0.001</b>	0 (0%)	0 (0%)	1
<i>Coronavirus**</i>	2 (12%)	5 (12%)	1	0 (0%)	0 (0%)	1	0 (0%)	3 (7.9%)	1

**e-Table 5: Adverse events of bronchoscopy and BAL by age**

	< 6 years				≥ 6 years			
	Non- BAL group (n = 90)	BAL group (n = 68)	n	p	Non- BAL group (n = 6)	BAL group (n = 39)	n	p
Midazolam dose, mean ± SD, mg/kg	0.382 (±0.0399)	0.304 (±0.0513)		< <b>0.001</b>	0.729 (±1.18)	0.181 (±0.0998)		0.9
<b>During bronchoscopy</b>								
Length of sedation, mean ± SD (minutes)	10.9 (±3.63)	10.7 (±3.81)		0.69	9.17 (±3.19)	12.5 (±7.06)		<b>0.048</b>
Poor bronchoscopy tolerance*, n (%)	6 (7.1%)	10 (16%)	16	0.095	1 (17%)	5 (15%)	6	1
<b>After bronchoscopy</b>								
Fever, n (%)	19 (21%)	11 (16%)	30	0.43	0 (0%)	2 (5.1%)	2	1
Bronchospasm, n (%)	13 (14%)	5 (7.4%)	18	0.16	0 (0%)	3 (7.7%)	3	1
Oxygen requirement, n (%)	18 (20%)	7 (10%)	25	0.098	0 (0%)	2 (5.1%)	2	1
≥ 1 night hospitalization, n (%)	14 (16%)	6 (8.8%)	20	0.21	1 (17%)	1 (2.6%)	2	<b>0.25</b>

\* During the bronchoscopy (hypoxia, important cough, commotion related to midazolam side effect)

**e-Table 6: Pre-post bronchoscopy therapeutic changes**

	Non-BAL group			BAL group			Non- BAL group <i>versus non-BAL</i> group	
	Pre (n = 96)	Post (n = 96)	p	Pre (n = 107)	Post (n = 107)	p	Pre (p)	Post (p)
Low dose inhaled corticosteroids	3 (3.2%)	1 (1.1%)	0.62	6 (5.8%)	4 (3.9%)	0.52	0.5	0.37
Medium dose inhaled corticosteroids	15 (16%)	11 (12%)	0.4	14 (14%)	15 (15%)	0.84	0.66	0.53
High dose inhaled corticosteroids	73 (77%)	83 (87%)	0.058	82 (80%)	84 (82%)	0.72	0.64	0.26
No corticosteroids	4 (4.2%)	0 (0%)	0.12	1 (0.97%)	0 (0%)	1	0.19	
Oral corticosteroids	37 (39%)			17 (16%)			<b>&lt;0.001</b>	
Long-acting beta agonist (LABA)	5 (5.2%)	8 (8.3%)	0.39	17 (16%)	18 (17%)	0.85	<b>0.015</b>	0.071
Short-acting beta agonist (SABA)	47 (49%)	50 (52%)	0.66	83 (78%)	87 (81%)	0.5	<b>&lt;0.001</b>	<b>&lt;0.001</b>
Anticholinergic	13 (14%)	16 (17%)	0.55	75 (70%)	76 (71%)	0.88	<b>&lt;0.001</b>	<b>&lt;0.001</b>
Montelukast	15 (16%)	15 (16%)	1	22 (21%)	16 (15%)	0.28	0.36	0.89
Omalizumab	0 (0%)	0 (0%)		2 (1.9%)	8 (7.5%)	0.052	0.5	<b>&lt;0.01</b>
Azithromycin	2 (2.1%)	5 (5.2%)	0.44	5 (4.7%)	31 (29%)	<b>&lt;0.001</b>	0.45	<b>&lt;0.001</b>
Long-term antibiotics	1 (1%)	6 (6.2%)	0.12	3 (2.8%)	14 (13%)	<b>&lt;0.01</b>	0.62	0.1
Short-term antibiotics	8 (8.3%)	31 (32%)	<b>&lt;0.001</b>	1 (0.93%)	48 (45%)	<b>&lt;0.001</b>	<b>0.014</b>	0.059