

**Table S1** – Viral detections in cases and controls with initial matching strategy.

Detected virus	Cases (n=121)	Controls (n=240)	Unadjusted	Adjusted
	n (%)		Odds Ratios (95% Confidence interval)	
Adenovirus	18 (15)	17 (7)	<b>2.3 (1.1-4.7)</b>	1.5 (0.5-4.4)
Bocavirus	14 (12)	50 (21)	<b>0.5 (0.3-1.0)</b>	<b>0.3 (0.1-1.0)</b>
Coronavirus (any)	6 (5)	28 (12)	<b>0.4 (0.2-1.0)</b>	<b>0.0 (0.0-0.3)</b>
HKU1	3 (3)	16 (7)	0.3 (0.1-1.2)	
NL63	1 (1)	3 (1)	0.7 (0.1-6.4)	
OC43	1 (1)	8 (3)	0.2 (0.0-1.9)	
229E	1 (1)	2 (1)	1.0 (0.1-11.0)	
Enterovirus	2 (2)	7 (3)	0.5 (0.1-2.8)	
Influenza (any)	8 (7)	4 (2)	<b>6.6 (1.4-31.8)</b>	<b>62.0 (1.5-2491.5)</b>
Influenza A	5 (4)	2 (1)	8.0 (0.9-71.6)	
H1N1	2 (2)	3 (1)	1.3 (0.2-8.0)	
Influenza B	2 (2)	-	-	
Metapneumovirus	28 (23)	11 (5)	<b>6.9 (3.0-16.0)</b>	<b>32.2 (5.5-186.5)</b>
Parainfluenza (any)	3 (3)	7 (3)	0.9 (0.2-3.3)	
Parainfluenza 1	1 (0)	1 (1)	2.0 (0.1-32.0)	
Parainfluenza 3	2 (2)	6 (3)	0.7 (0.1-3.3)	
RS virus	39 (33)	14 (6)	<b>10.0 (4.4-22.4)</b>	<b>60.7 (11.9-310.9)</b>
Rhinovirus	27 (23)	64 (27)	0.8 (0.5-1.3)	
Positive any virus	98 (81)	134 (56)	<b>3.0 (1.8-4.9)</b>	
Single infection	59 (50)	84 (35)	<b>3.0 (1.7-5.1)</b>	
Co-infection	38 (32)	52 (23)	<b>3.0 (1.6-5.4)</b>	
2 pathogens	33 (27)	35 (15)		
3 pathogens	4 (3)	12 (5)		
4 pathogens	1 (1)	1 (0)		
5 pathogens	1 (1)	2 (1)		

Odds ratios and 95% confidence intervals calculated with conditional logistic regression.

Predictors adjusted model: adenovirus, bocavirus, coronavirus, influenza virus, metapneumovirus, respiratory syncytial virus, ongoing antibiotic treatment, influenza vaccination, trip abroad, chronic disease. Significant associations marked in bold.

**Table S2 - Virus Pairs in Co-infected Cases (n=121)**

	<b>HAdV</b> (n=18)	<b>HBoV</b> (n=14)	<b>HCoV</b> (n=6)	<b>HEV</b> (n=2)	<b>hMPV</b> (n=28) n (%)	<b>Flu</b> (n=8)	<b>PIV</b> (n=3)	<b>HRV</b> (n=24)	<b>RSV</b> (n=39)
<b>Single infections</b>	3 (17)	1 (7)	-	-	13 (46)	6 (75)	1 (33)	10 (42)	25 (64)
<b>Co-infections</b>	15 (83)	13 (93)	6 (100)	2 (100)	15 (54)	2 (25)	2 (67)	14 (58)	24 (36)
<b>HAdV</b>	-	1 (7)		1 (50)	5 (18)	1 (13)		7 (29)	3 (8)
<b>HBoV</b>	1 (5)	-	2 (33)	1 (50)	4 (14)		2 (67)	3 (13)	5 (13)
<b>HCoV</b>		2 (14)	-		2 (7)		1 (33)	2 (8)	4 (10)
<b>HEV</b>	1 (5)	1 (7)		-	1 (4)				
<b>hMPV</b>	5 (27)	4 (29)	2 (33)	1 (50)	-	1 (13)		5 (21)	2 (5)
<b>Flu</b>	1 (13)				1 (13)	-			
<b>PIV</b>		2 (14)	1 (17)				-	1 (4)	1 (3)
<b>HRV</b>	7 (39)	3 (21)	2 (33)		5 (18)		1 (33)	-	2 (5)
<b>RSV</b>	3 (17)	5 (29)	4 (67)		2 (7)		1 (33)	2 (8)	-

Abbreviations: Flu, influenza virus; HAdV, adenovirus; HBoV, bocavirus; HCoV, coronavirus; HEV, enterovirus; hMPV, metapneumovirus; HRV, rhinovirus; PIV, parainfluenza virus; RSV, respiratory syncytial virus