

Supplementary Appendix - CanLoCAN Investigators

The following investigators (grouped by centre) were investigators in the Canadian Long COVID Autonomic Network (CanLoCAN):

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Supplemental Table S1. Autonomic Symptom Prevalence in Patients with PASC, overall cohort and with and without HCAA

General PASC Symptoms				
General PASC Symptom	Overall (n=70, %)	Patients with PASC with HCAA (n=51, %)	Patients with PASC without HCAA (n=19, %)	p-value
Confusion/difficulty concentrating	55 (79%)	39 (77%)	16 (84%)	0.483
Vision problems	28 (40%)	17 (35%)	11 (56%)	0.081
Ringing in ear	31 (44%)	22 (44%)	9 (47%)	0.802
Problems speaking/communicating	31 (44%)	25 (49%)	6 (32%)	0.191
Problems swallowing/chewing	8 (11%)	6 (12%)	2 (11%)	0.844
Weight loss	12 (17%)	9 (18%)	3 (16%)	0.829
Loss of appetite	23 (33%)	17 (34%)	6 (33%)	0.959
Diarrhea	16 (23%)	14 (29%)	2 (11%)	0.127
Stomach/abdominal pain	30 (43%)	23 (46%)	7 (37%)	0.493
Feeling sick/vomiting	27 (39%)	21 (42%)	6 (32%)	0.428
Problems with urination	10 (14%)	7 (14%)	3 (16%)	0.850
Loss/change in smell	25 (36%)	18 (37%)	7 (37%)	0.993
Pain on breathing	21 (30%)	16 (32%)	5 (28%)	0.740
Persistent cough	21 (30%)	17 (34%)	4 (21%)	0.296
Chest pains	38 (54%)	26 (51%)	12 (63%)	0.363
Persistent muscle pain	40 (57%)	30 (60%)	10 (53%)	0.580

Joint pain/swelling	37 (53%)	27 (55%)	10 (53%)	0.854
Can't fully move or control movement	6 (9%)	5 (10%)	1 (5%)	0.505
Can't feel one side of body or face	5 (7%)	3 (6%)	2 (11%)	0.491
Tingling feeling (pins and needles)	40 (57%)	25 (51%)	15 (83%)	0.017
Erectile dysfunction	2 (3%)	2 (4%)	0 (0%)	0.371
Changes in menstruation	12 (17%)	8 (17%)	4 (21%)	0.673
Problems with balance	33 (47%)	24 (48%)	9 (47%)	0.963
Muscle weakness	41 (59%)	30 (60%)	11 (58%)	0.874
Fainting/blackouts	7 (10%)	5 (10%)	2 (11%)	0.969
Seizures/fits	1 (1.4%)	1 (2%)	0 (0%)	0.526
Tremor/shakiness	28 (40%)	22 (46%)	6 (32%)	0.286
Swollen ankles	13 (19%)	9 (18%)	4 (21%)	0.772
Lumps/rashes on toes	4 (6%)	2 (4%)	2 (11%)	0.311
Skin rash	13 (19%)	10 (20%)	3 (16%)	0.664
Bleeding	3 (4%)	1 (2%)	2 (11%)	0.126

Values are expressed as n (%). P-values were generated from Fischer's Exact test for categorical variables. HCAA – hemodynamic cardiovascular autonomic abnormalities; PASC – Post-Acute Sequelae of COVID-19.

Supplemental Table S2. Participant characteristics, hemodynamics, and symptoms in hospitalized vs. non-hospitalized patients with PASC

Characteristic	Hospitalized Patients with PASC (n=9)	Non-Hospitalized Patients with PASC (n=61)	p-value
Age, years	53 (41, 49)	41 (39, 46)	0.051
Female	6 (11%)	3 (21%)	0.284
Height, cm	170 (160, 183)	168 (165, 170)	0.765
Weight, kg	102 (90, 127)	75 (68, 82)	0.004
BMI, kg/m ²	34.3 (26.9, 51.5)	26.6 (24.4, 28.1)	0.008
BSA, m ²	2.16 (2.01, 2.35)	1.87 (1.78, 2.0)	0.005
Race			0.915
Caucasians	9 (100%)	55 (90.2%)	
South Asians	0 (0%)	2 (3.3%)	
West Asians	0 (0%)	1 (1.6%)	
Indigenous Canadian	0 (0%)	1 (1.6%)	
≥1 race	0 (0%)	2 (3.3%)	
Duration since Initial COVID infection, days	320 (272, 418)	421 (341, 465)	0.092
Autonomic Function Testing			
Sympathetic Nerve Integrity (Total Sweat Volumes)			
Forearm, μL	1.25 (0.43, 1.47)	0.49 (0.35, 0.64)	0.02
Proximal leg, μL	0.38 (0.1, 1.04)	0.39 (0.31, 0.66)	0.888
Distal leg, μL	0.77 (0.13, 1.67)	0.48 (0.38, 0.61)	0.409
Foot, μL	0.48 (0.22, 1.93)	0.41 (0.28, 0.55)	0.209
Cardiovagal function			

$\Delta\text{HR}_{\text{DB}}$ (bpm)	11 (9, 19)	16 (12, 18)	0.159
VR	1.69 (1.38, 2.02)	1.76 (1.67, 1.94)	0.383
Composite Autonomic Severity Score (CASS)			
Overall CASS	2 (1, 3)	1 (1, 2)	0.342
Sudomotor	0 (0, 0)	0 (0, 0)	0.277
Cardiovagal	1 (0, 1)	0 (0, 0)	0.022
Adrenergic	1 (1, 1)	1 (1, 1)	0.471
Autonomic Symptom Assessment			
COMPASS-31 Domains			
Orthostatic Intolerance	16 (0, 32)	20 (16, 20)	0.425
Vasomotor	0 (0, 4.17)	0 (0, 0)	0.612
Secretomotor	4.29 (2.14, 8.57)	6.43 (4.29, 6.43)	0.823
Gastrointestinal	7.14 (3.57, 14.3)	8.04 (6.25, 9.82)	0.455
Bladder	1.11 (0, 3.33)	0 (0, 1.11)	0.105
Pupillomotor	2.67 (1, 3.33)	2.33 (2.0, 2.67)	0.711
Total	33 (18, 54)	37 (31, 40)	0.605
PASC Symptoms			
Light-headedness	6 (67%)	49 (80%)	0.351
Shortness of breath	7 (78%)	44 (73%)	0.777
Palpitations	4 (44%)	45 (74%)	0.073
Fatigue	8 (89%)	56 (92%)	0.771
Headache	4 (44%)	37 (62%)	0.327

Loss/change in taste	3 (33%)	18 (31%)	0.864
Constipation	2 (22%)	18 (30%)	0.632
Problems with sleeping	6 (75%)	45 (75%)	1.00

Values are expressed as Median (95% Confidence Interval [CI]). P-values were generated from Mann-Whitney U test for continuous variables and Fischer's Exact test for categorical variables. BMI – Body Mass Index; BSA – Body Surface Area; CASS – Composite Autonomic Severity Score; COMPASS-31 - Composite Autonomic Symptom Score; ΔHR_{DB} – Delta HR in Deep Breathing; PASC – Post-Acute Sequelae of COVID-19; VR – Valsalva Ratio; HR – Heart Rate.