Introduction In March-April 2020, and again in winter '20–21, children began presenting to our centre with a novel systemic inflammatory syndrome associated with SARS-CoV-2 exposure or infection. A group of these children required respiratory support. We present updated data on lung function outcomes following discharge. Data in a subset of individuals in this group has previously been reported (Penner et al, *Lancet Child Adolesc Health* 2021).

Methods Children with PIMS-TS requiring invasive, or non-invasive, ventilatory support during the acute phase undertook spirometry, body plethysmography and a measurement of transfer factor at a structured follow up 6-weeks post discharge. Data was collected prospectively between April 2020 and February 2021 and are reported as descriptive statistics, with predicted values reported in comparison to Global Lung Initiative data where available.

Results 30 lung function measurements (in 29 patients) were included (table 1). Spirometry was performed at all visits with 1 child unable to achieve a result fulfilling ATS/ERS criteria, and was normal in all other children. 1/27 child (4%) showed evidence of abnormal alveolar volume and gas exchange efficiency.

Conclusion Similar to other systemic inflammatory syndromes (Staphylococcal toxic shock, Kawasaki disease), and unlike Covid-19 in adults, it appears that children's lungs are at low risk of long term damage by PIMS-TS. This data is preliminary and we have not assessed exercise tolerance, or outcomes in those with presentations that did not require initial respiratory support. Assessments are ongoing in this cohort and in children presenting following infection with new variants of concern.

Abstract S72 Table 1 Table of lung function results expressed as mean and 95% CI = Confidence Interval

Demographic	N=	Mean	(95% CI)
Age (years)	N= 30	11.73	(10.70, 12.77)
Sex, Female%	N=14 (48%)		
Height (cm)	N=30	152.24	(145.62, 158.86)
FeNo (ppb)	N=26	16.28	(9.01, 23.55)
FEV ₁ % _{pred} (%)	N=29	103.85	(98.04, 109.66)
FEV ₁ z-score	N= 29	0.32	(0.00, 1.00)
FVC% _{pred} (%)	N= 29	103.3	(98.25, 108.35)
FVC z-score	N= 29	0.25	(-0.15, 0.66)
FEV1:FVC	N= 29	98.84	(96.69, 100.99)
Ratio% _{pred} (%)			
FEV1:FVC	N=29	-0.09	(-0.41, 0.23)
Ratio z-score			
TL _{CO} % _{pred}	N=23	86.69	(80.00, 93.39)
TL _{CO} z-score	N=23	-1.04	(-1.70, -0.37)
K _{CO} % _{pred}	N=23	97.22	(91.34, 103.01)
K _{CO} z-score	N=23	-0.22	(-0.65, 0.21)
VA% _{pred}	N=23	88.87	(84.09, 93.65)
VA z-score	N=23	-1.01	(-1.44, -0.58)
FRC _{pleth} % _{pred} (%)	N=15	88.00	(80.99, 95.01)
FRC _{pleth} z-score	N=15	-0.77	(-1.26, -0.28)
TLC% _{pred} (%)	N=15	98.2	(92.17, 104.23)
TLC z-score	N=15	-0.15	(-0.66, 0.36)
RV% _{pred} (%)	N=15	83.47	(71.34, 95.60)
RV z-score	N=15	-0.43	(-0.88, 0.02)

REFERENCE

1. Penner, et al. 6-month multidisciplinary follow-up and outcomes of patients with paediatric inflammatory multisystem syndrome (PIMS-TS) at a UK tertiary paediatric hospital: a retrospective cohort study. *Lancet Child Adolesc Health* 2021;5 (7):473–482.

A cut above: an update in thoracic surgery

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MANAGEMENT OF BRONCHIAL STENOSIS IN POST LUNG TRANSPLANTATION – INITIAL EVALUATION OF BIODEGRADABLE STENTS

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Introduction Bronchial stenosis one of the most common airway complications post lung transplantation. The incidence varies from about 5 to 20, most commonly seen between 2 to 9 months post transplantation and is a significant cause of morbidity and mortality.

Methods Retrospective analysis of prospectively collected data of patients who have undergone lung transplantation at the institute over the last 10 years. Patients who have had bronchial stenosis post operatively were identified which was identified on surveillance/diagnostic bronchoscopy. Data was gathered with regards to the type of interventions used to treat the bronchial stenosis and the treatment outcomes were compared, along with looking at the efficacy of absorbable bio degradable stents.

Results A total of 524 lung transplantations were performed, which included bilateral single sequential, single and heart lung transplantation. 44 Patients developed bronchial stenosis out of which 32 patients required interventions for the stenosis. The most common site for non-anastomotic stenosis was found to be bronchus intermedius (28 patients – 63%) followed by left main bronchus (9 patients – 20%), right main bronchus (5 – 11%) and left upper lobe bronchus (2%). The patients were treated in a stepwise approach, initially balloon dilatation (32 patients - 72%), which was followed up with cryotherapy (15 patients-34%) and ultimately treated with endobronchial stents (9 patients – 18%).

Currently 4 Patients have undergone biodegradable stent placements (2 unilaterally and 1 bilateral) which show better short-term outcomes as compared to metallic stents.

With metallic stents, 3 patients have had an incidence of bronchomalacia, 1 required restenting, and 2 had persistent stenting post removal.

The biodegradable stents have had no reports of bronchomalacia and also decreased the need for intervention to removal the stent.

Conclusions Biodegradable stents have been newly introduced which hold strength initially and degrade over months. It also bypasses the issue of stent removal. Biodegradable stents also show improved FEV1 post bronchial stenosis. Overall biodegradable stents show a promising outcome, although long term follow up and prospective studies need to be undertaken to adequately compare benefits and subsequent complications as compared to conventional stents.