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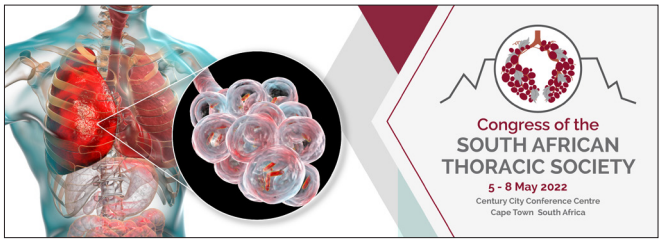

CATEGORY: THORACIC SURGERY

Systematic review of neoadjuvant immunotherapy for patients with non-small cell lung cancer

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Background. There is a paucity of clinical evidence for the role of neoadjuvant immunotherapy in patients with resectable non-small cell lung cancer (NSCLC).

Objective. The primary aim of the study was to identify the existing evidence on the feasibility, safety and efficacy of neoadjuvant immunotherapy.

Methods. A systematic review was conducted using electronic databases. Relevant studies were identified according to predefined selection criteria. Five relevant publications on four completed trials were identified

Results. In most studies, >90% of the cases had no surgical delay due to neoadjuvant immunotherapy. There was a high incidence of open thoracotomy procedures, either planned or converted from a planned minimally invasive approach. Mortality ranged from 0 - 5%, but none of the reported deaths was considered directly treatment-related, according to individual reports. Morbidities were categorised according to adverse events related to neoadjuvant systemic therapy, and postoperative surgical complications. Survival outcomes were limited due to short follow-up periods, which ranged from 18 to 29 months. Major pathologic response ranged from 40.5 to 56.7%, while complete pathologic response of the primary tumour ranged from 15 to 33%. Radiological responses were reported according to Response Evaluation Criteria in Solid Tumours (RECIST) criteria and fluorodeoxyglucose avidity on PET.

Conclusion. This systematic review reported safe perioperative outcomes of patients who underwent resection following neoadjuvant immunotherapy. However, there was a relatively high incidence of open thoracotomy procedures, partly due to the technical challenges associated with increased fibrosis and inflammation of tissue, as well as the more advanced stages of disease in patients enrolled in the studies. Future studies should focus on identifying predictors of pathological response.

EKOS ultrasound-directed catheter-delivered pulmonary thrombolysis – a very short experience

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Introduction. Pulmonary embolism is a deadly spectrum of disease, likely under-diagnosed and managed. Intervention evolutions show an increasing understanding of the disease. Anticoagulants are considered non-effective, systemic thrombolytics have side-effects and uncertain impact on obstruction, surgical embolectomy attends to central disease and has morbidity and mortality, while catheter-directed therapies have allowed for distal and proximal thrombolysis and are less invasive. EKOS therapy is the newest therapy and the short-term outcomes are encouraging.

Case. We present six patients diagnosed with massive and submassive emboli as per RV/LV ratios. Only one patient required veno-arterial ECMO support and one was found to have an acute event against established CTEPH. Therapy was between 12 and 24 hours. The CTEPH patient required an additional 12-hour course to clear the thrombus burden. Total postoperative stays were <5 days, except for the CTEPH and ECMO patients. Our under-6 month experience with EKOS therapy composed transfemoral venous access, right heart manometry, pulmonary angiography, EKOS catheter positioning then a 12- to 24-hour local Actilyse dose of between 6 - 24 mg.

Conclusion. EKOS therapy offers complete pulmonary bed access and early outcomes are encouraging.

Uniportal VATS pneumonectomy in calcified empyema thoracis with BPF

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Introduction. Calcified empyema thoracis with a bronchopleural fistula presents a surgical challenge, especially in a bronchiectatic lung. Presenting as an extreme of the spectrum of pleuropulmonary suppuration, TB is a common inciting agent in South Africa. Most patients present as burnt-out TB, and chronic illness and cough with sputum production being common symptoms. Pulmonary resection carries a 55% chance of post-resection empyema, as per Le Roux *et al*., making planning for postresection space important. Uniportal VATS preserves chest wall muscles, allowing earlier rehabilitation and thoracomyoplasty, should postresection empyema develop.

Case. We present a 64-year-old HAART-suppressed male, presenting with a cough that had lasted one year, with yellow-brown sputum, worsened when lying supine or on the left side. The patient therefore sleeps semi-recumbent and on his right. There were no constitutional

or other cardiorespiratory symptoms. The patient had been treated for pulmonary TB thrice, and had undergone a chest drainage a year prior. Symptoms improved initially, but recurred within a month of removal. Clinical signs were appropriate. A chest X-ray showed a contracted right chest, calcified thick pleura, hydropneumothorax, and collapsed lung with cavities, which was confirmed by CT scan. The right lung contributed 5.8% to lung perfusion on V/Q. Management included physiotherapy, postural drainage and antibiotic cover till minimal sputum and marked fluid level reduction was achieved. Thereafter, uniportal VATS pneumonectomy, partial pleurectomy and intrapleural parietal debridement was undertaken. The empyema cleared.

Discussion. Uniportal VATS pulmonary resection, in the phase of empyema, offers benefit above surgery.

Pectus carinatum bracing: When more is less.

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Introduction. Pectus carinatum (pigeon chest)manifests when the sternum is pressed outwards. Mild in the very young it rapidly progresses during the adolescent growth spurt. Pectus conditions are more common than appreciated, with an incidence of one in 1 000 live births. Pectus deformity is more common in Marfan's disease and has a genetic incidence of ~40%.

The condition is often asymptomatic but may cause pain when the patient partakes in contact sport. Most importantly, young adolescents may develop self-image problems with sometimes major psychological effects. Treatment is external bracing as a first option, which is extremely successful in the adolescent patient. The older patient, however, may require surgical correction.

Methods. This is a clinical study using the international standard of treating pectus carinatum. Early results of the first 30 cases with the 3-D printed brace are presented.

Results. All patients with the exception of two had improvements in the degree of carinatum deformity, with total correction in a number of patients. Data are being analysed and will be presented. Preliminary data show that bracing is highly successful in the adolescent age group but not as much with the older patient.

Conclusion. Bracing should be the treatment of choice in the adolescent patient and the first option, before surgery is offered.

Pectus excavatum. The Nuss procedure – a modern approach

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Introduction. Pectus excavatum manifests when the sternum is pressed inwards. Treatment has progressed from a time when surgery was not advised, to the open invasive Ravitch repair, the modified Ravitch, the minimally invasive approaches of Robicsek and more recently the Nuss repair, which has revolutionised the surgical correction of pectus excavatum. The Nuss procedure is a thoracoscopic procedure which avoids any cutting of cartilage or bone, and allows the patient to return to full contact sport at the highest level. The surgical technique will be presented with the various modifications from the many international centres. The indications for repair are to correct the cardiac compression, pulmonary impairment and major psychological problems that these children suffer from.

Methods. This presentation is a personal experience of over 300 cases and will analyse early and late results.

Results. The Nuss procedure gives excellent early and late results. Physiological studies show a 38% improvement in cardiac output with exercise.

Conclusion. The minimally invasive Nuss procedure is the surgical technique of choice in the young teenage patient. The indications for a Ravitch repair are few and should be the absolute exception.

Intrathoracic neuroblastoma in paediatric patients

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Introduction. Neuroblastoma is an aggressive malignant tumour of the autonomic ganglia. It accounts for 50 - 60% of primary mediastinal tumours in infancy and childhood. These tumours are located in the posterior mediastinum in the paravertebral gutter, originating from ganglion cells and resulting in local and distant metastases. Diagnosis is vanillymandelic acid and homovanillic acid urine testing, with histology being definitively diagnostic. Metastatic work-up is by whole-body MRI and bone marrow aspiration. Surgical excision or debulking followed by chemotherapy form the mainstay of treatment.

Case. We present a 4-year-old female, presenting with severe respiratory distress, a 2-week history of cough, fatigue and neck and face swelling. Negative chest drainage had been undertaken, on suspicion of massive pleural effusion as examined by the casualty officer. The child was PCR-negative, RVD-exposed, and had been empirically treated for TB. She was acutely ill, pale with facial oedema and distended neck veins, in extremis. Signs of left chest space occupation was confirmed on repeat chest X-ray and hepatomegaly. Emergency tumour debulking was undertaken via left posterolateral thoracotomy, with a finding of intrathoracic invasion, with preserved lung. Immediate recovery allowed for chemotherapy. She defaulted treatment resulting in recurrence. Reoperation required the excision of an anterior mediastinal mass including the thymus. Chemotherapy was restarted but there was recurrence 10 months thereafter.

Discussion. Neuroblastoma in infancy and childhood tends to be aggressive, with recurrence and related mortality when compared with older patients.

CATEGORY: PAEDIATRIC PULMONOLOGY (INCLUDING PHYSIOTHERAPY)

Effect of short-term exposure to ambient nitrogen dioxide and particulate matter on repeated lung function measures in infancy: A South African birth cohort

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Background. The developing lung is highly susceptible to ambient air pollutants, with both short- and long-term aetiology demonstrating a causal link with early childhood effects.
Objective. This study assessed the short-term exposure to nitrogen dioxide (NO_2) and particulate matter (PM10) on lung function in infants aged 6 weeks, 6, 12 and 24 months respectively.
Methods. Lung function was measured by multiple breath washouts and tidal breathing in non-sedated infants. Two-week average exposure estimates for NO_2 and PM10 (preceding the test date) were established by hybrid predictive modelling. A generalised linear mixed-models adjusted for the repeated measures design was used.
Results. Lung function measurements were obtained from 165 infants, with 82 of them having more than one test occasion. Exposure to PM10 resulted in a decline in tidal volume at 6 weeks (β -0.4mL/kg (95% CI -0.9 - 0.0), p=0.065), 6 months (β -0.5mL/kg (95% CI -1.0 - 0.0), p=0.046) and 12 months (β -0.3mL/kg (95% CI -0.7 - 0.0), p=0.045). PM10 was related to an increase in respiratory rate and minute ventilation, while a decline was observed for functional residual capacity for the same age groups.
Conclusion. Our study suggests that PM10 results in acute lung function impairments among infants from a low-socioeconomic setting, while the association with NO_2 was less substantial.

Environmental exposures associated with early childhood recurrent wheezing in the Mother and Child in the Environment (MACE) birth cohort: A time-to-event study

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Background. Environmental exposures are risk factors for the development of wheezing in early childhood.
Objective. The aim of this study was to identify environmental risk factors associated with recurrent wheezing in children from birth to 48 months in the Mother and Child in the Environment (MACE) cohort, using time-to-event analysis.
Methods. Maternal questionnaires and annual clinical assessments of children were conducted among 520 mother-child pairs. Complex modelling described home address measures of antenatal exposure to sulphur dioxide (SO_2) nitrogen dioxide (NO_2) and particulate matter (PM2.5, PM10). The probability of time to recurrent wheezing (more than two episodes of wheeze) and the relationship between wheezing and ambient pollution, biomass fuel use and environmental tobacco smoke (ETS) was achieved using the Kaplan-Meier hazard function and the Cox-proportional hazard model.
Results. Overall, 378 (73%) reported no wheezing episodes, 85 (16%) a single wheeze and 57 (11%) recurrent wheeze. Mean pollutant exposure did not vary significantly among the three groups. Time to recurrent wheeze (42.9 months) and single wheeze (37.8 months) among children from households with biomass energy sources was significantly shorter than those from households using electricity (45.9 (recurrent wheeze) and 38.9 months (single wheeze), respectively (p=0.03)). Children with exposure to ETS were more likely to have had recurrent wheeze compared to those not exposed (adjusted HR=3.76, 95% CI 1.33 - 10.66). Pollutants exposure showed a non-significant increased risk with wheezing.
Conclusion. Exposure to environmental tobacco smoke and use of biomass energy sources increased the risk for recurrent wheezing with a possible increased risk due to ambient pollutants.

Beta-adrenergic sweat test in South Africans with inconclusive cystic fibrosis diagnosis

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Introduction. Investigating inconclusive cystic fibrosis (CF) diagnosis is difficult without advanced cystic fibrosis transmembrane conductance regulator (CFTR) activity tests. This study investigated the utility of the beta (β)-adrenergic sweat test to exclude CF in participants with inconclusive diagnosis (CF suspects) in South Africa (SA).
Methods. The β-adrenergic sweat test and sweat chloride tests were performed simultaneously in CF suspects and adult controls (healthy, CFTR heterozygotes and CF). The β-adrenergic induced sweat rate was measured by evaporimetry (transepithelial water loss, TEWL: gm $H_2O/m^2/hr$) following intradermal injection of β-adrenergic drugs. Next-generation sequencing of CFTR was performed in CF suspects. CF diagnosis was defined by genotype.
Results. Thirty-seven adult controls (10 healthy, 14 CF, 13 CFTR heterozygotes) and 32 CF suspects (26 children; 6 adults) were enrolled. Six were excluded from formal analyses owing to β-adrenergic sweat test failure. Evaporimetry in adults was more accurate than sweat chloride for diagnosis of CF with β-adrenergic:cholinergic ratio ≤ 0.05 achieving100% sensitivity and specificity. Twenty-two CF suspect children (age range 3.4 -15.6 years) completed β-adrenergic sweat testing of whom none had CF confirmed by genotyping: β-adrenergic:cholinergic ratio >0.05 successfully excluded CF in all but one child who was CFTR heterozygous. Median peak β-adrenergic TEWL and β-adrenergic:cholinergic ratio in CFTR-negative and CFTR-heterozygous children was significantly lower than in the adult controls.
Conclusion. β-adrenergic sweat test is accurate for excluding CF in adults and children with inconclusive diagnosis. β-adrenergic:cholinergic ratio performed better than peak β-adrenergic TEWL for excluding CF in children owing to lower β-adrenergic secretion rate compared to adults.

Bronchiectasis in African children: Prevalence, aetiology and clinical spectrum at a paediatric tertiary hospital in Cape Town, South Africa

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Introduction. Childhood bronchiectasis is an important cause of chronic lung disease globally, particularly in low-to-middle-income countries (LMICs). Data from LMICs, including South Africa (SA), are lacking.

Objective. We aimed to describe the disease burden, aetiology and clinical spectrum of bronchiectasis in children attending a tertiary hospital in Cape Town, SA.

Methods. Data were collected by chart review of all patients 3 months to 15 years old, attending the respiratory clinic at Red Cross War Memorial Children's Hospital between January – December 2019.

Results. Of 337 children attending the clinic during the study period, 58 (17.2%) had bronchiectasis. The mean (standard deviation (SD)) age at enrolment was 92 (41) months and 32 (55%) were female. The mean (SD) age at bronchiectasis diagnosis was 34 (26) months. The mean (SD) weight-for-height *z* score was 0.0 (1.6). The mean (SD) height-for-age z score was 1.2 (1.6). Sixteen (27.6%) of the participants were living with HIV. The most common cause of bronchiectasis was post-infection (*n*=40;69%). Other causes included aspiration syndrome (*n*=8;14%), anatomical abnormalities (*n*=4; 6.8%) and immunodeficiency (*n*=19; 33%) (*n*=16/19 (84%) acquired and *n*=3/19 (16%) primary immunodeficiency). TB was the most common organism isolated in children with post-infectious bronchiectasis (*n*=16/40; 40%). Clinical features included wet cough in *n*=41/48 (87%), course crepitations 64%, hyperinflation 41%, finger clubbing 36%, wheeze *n*=17/58 (29%) and exertional dyspnoea in *n*=7/58 (12%)

Conclusion. Bronchiectasis is a common cause of chronic lung disease in SA children, resulting mostly from previous pneumonias, with TB the predominant infection. The importance of identifying underlying treatable causes is highlighted.

Primary pulmonary mucoepidermoid carcinoma in two children: Case reports

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Introduction. Pulmonary mucoepidermoid carcinoma (PMEC) is rare, accounting for 0.1 - 0.2% of all primary pulmonary carcinomas. We present 2 cases of PMEC in Cape Town, South Africa, seen over a 3-year period.

Cases. Patient 1, an 11-year-old boy presented with haemoptysis for 1 year and right upper lobe atelectasis with hilar opacity on chest radiograph. An enhancing mass in the right tracheobronchial angle was seen on chest CT and flexible bronchoscopy identified an infiltrative mass at the right upper lobe bronchus. Endoscopic biopsy confirmed a low-grade PMEC. The patient had a right upper sleeve lobectomy, followed by radiotherapy, and made a full recovery.

Patient 2, a 6-year-old girl presented with a 3-month history of cough, weight loss and night sweats. Examination showed right tracheal shift, dull percussion and reduced air entry over the right lung owing to right middle and lower lobe atelectasis. Flexible bronchoscopy revealed a round mass occupying the right main bronchus. Endoscopic biopsy confirmed a low-grade PMEC. A chest CT confirmed the mass arising in the right main bronchus causing distal atelectasis and bronchiectasis of the right lower and middle lobes. A right pneumonectomy with carinal reconstruction and complete tumour resection was performed without complications.

Discussion. Both cases of PMEC presented with persistent atelectasis. Investigating persistent atelectasis in children is important to exclude rare causes such as primary lung tumours that mimic common conditions like tuberculosis.

Conclusion. Early diagnosis of PMEC and surgical resection are key to ensuring a favourable outcome.

Congenital central hypoventilation syndrome in South African infants: Not so rare after all

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Introduction. Congenital central hypoventilation syndrome (CCHS) is a rare genetic syndrome characterised by life-threatening hypoventilation and may be associated with autonomic dysfunction. We discuss 3 recent cases presenting at two neonatal units in South Africa.

Case. Infant A was born at term and presented with apnoeas and hypercapnia at 2 days old and was treated as congenital pneumonia managed with non-invasive ventilation. Persistent hypoxia associated with hypercapnia after 3 weeks prompted referral and diagnosis of CCHS. Long-term home ventilation was not feasible in this case and the infant died on day 42 of life with active palliation.

Infant B was born at term and presented at birth with recurrent apneas complicated by hypoxia seizures requiring prolonged mechanical ventilation until the diagnosis was confirmed at 2 months old. Apnoeas and hypoventilation improved over time. The infant is currently receiving tracheostomy-assisted nocturnal home ventilation and doing well. Infants A and B both had 20/25 polyalanine repeat expansion PHOX2B mutations.

Infant C was born at 37 weeks and presented with recurrent apnoeas at birth requiring mechanical ventilation and complicated Hirschprung's disease, requiring laparotomy. A tracheostomy was performed for prolonged ventilation but the infant died on day 44 of life from nosocomial abdominal sepsis. 20/27 polyalanine repeat expansion PHOX2B mutation was confirmed in infant C.

Discussion. CCHS is an important diagnosis to consider in infants presenting with recurrent apnoeas and/or hypoventilation.

Conclusion. Early recognition and genetic confirmation of the diagnosis is important so that adequate respiratory support is promptly initiated to prevent irreversible hypoxic brain injury.

Diffuse alveolar haemorrhage in children: A case series from a tertiary-level hospital in South Africa

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Introduction. Diffuse alveolar haemorrhage (DAH) is considered a rare condition in children. There is no consensus on the management of DAH syndromes in Africa or other low -to-middle-income countries (LMICs).
Methods. We conducted a retrospective audit of children with DAH who were managed at the Chris Hani Baragwanath Academic Hospital paediatric pulmonology unit from 1 January 2011 to 31 December 2019.
Results. Thirteen children were included in the case series. Nine (69%) presented with severe microcytic anaemia. Of the nine children who had a bronchoalveolar lavage, seven (77%) had haemosiderin laden macrophages (HLM) on microscopy. Five (38%) children had a lung biopsy that showed intra-alveolar HLM; three (23%) had capillaritis. All children were started on oral prednisone at presentation, and nine (69%) received additional immunosuppressive treatment. Eight (62%) children had normal haemoglobin levels one year after initiation of treatment.
Conclusion. Our series highlights that DAH is uncommon in children, and a large proportion of children responded well to treatment despite resource limitations.

CATEGORY: ADULT PULMONOLOGY (INCLUDING PHYSIOTHERAPY)

Aquagenic wrinkling: An unusual presentation of cystic fibrosis in an adult female

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Introduction. Aquagenic wrinkling of the palms is a rare manifestation of cystic fibrosis (CF). We present a case of aquagenic wrinkling of the palms in a young woman as the only manifestation of CF.
Case.
A self-referred 22-year-old woman presented after internet research on CF because of marked aquagenic wrinkling of her hands. She reported a history of recurrent non-severe lower respiratory infections, and nasal polyposis in childhood but had normal growth trajectory and no respiratory symptoms or steatorrhoea as an adult. There was no family history of CF. Clinical findings were a well-nourished young woman with no digital clubbing and no nasal polyps. Examination of her palms was normal, but she presented photographs demonstrating marked aquagenic wrinkling. Chest examination, chest X-ray and spirometry were normal. Further investigations showed faecal elastase >500 µg/g, and negative sputum microbiology. CF was confirmed by two positive sweat chloride tests (67 and 65 mmol); and two pathogenic CFTR mutations: p.Phe508del and p.Leu206Trp.
Discussion. Aquagenic wrinkling of the palms is a rare manifestation of CF characterised by rapid and transient formation of edematous whitish plaques on the palms and sometimes feet, on exposure to water. The pathogenesis is unknown but has been attributed to exposure of the skin to abnormally high concentrations of salt. It is usually asymptomatic but individuals may experience pruritus or burning sensations.
Conclusion. A high index of suspicion for CF is required in individuals with wrinkling of the palms and no other symptoms typical of CF.

Post-COVID-19 lung disease in COVID-19 ICU survivors

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Introduction. COVID-19 resulted in an unprecedented worldwide spike in hospital and ICU admissions, predominantly for adult respiratory distress syndrome (ARDS). The survival rate for patients requiring mechanical ventilation in Cape Town is ~30%. Post-ICU admission sequelae and recovery trajectory, however, is unknown.
Methods. We systematically evaluated a cohort of COVID-19 ICU survivors at three months following discharge. A retrospective single-centre study of all COVID-19 pneumonia patients admitted for mechanical ventilation were followed up at the Post-COVID-19 Clinic between 1 July 2020 and 30 December 2021.
Results. A total of 26 patients were evaluated. Of these, 53% were male and co-morbidities were common. Diabetes and hypertension were present in 42% and 54%, respectively. Dyspnoea (89%) and fatigue (54%) were the most common post-COVID-19 symptoms. Median FEV1 and FVC were 73% and 71% of predicted, while DLCO was 59% of predicted. All patients who underwent CT chest showed abnormalities, with ground glass opacities (42%) and interstitial fibrosis (54%) being most common.
Conclusion. At three months after hospitalisation for COVID-19 pneumonia requiring mechanical ventilation, patients frequently reported ongoing symptoms, lung function was moderately impaired, and radiographic abnormalities were common. Longer-term follow-up is required to determine how frequently and to what extent respiratory impairment is permanent.

Correlation between lung function tests and peak oxygen consumption in post-TB lung disease

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Introduction. After TB treatment, many patients have post-TB lung disease (PTLD), associated with increased mortality and morbidity. Nevertheless, relationships between lung function testing and exercise capacity in people with PTLD are poorly understood.
Methods. This single-centre study investigated the association between

lung function testing and peak oxygen consumption (VO2peak) and percentage-predicted VO2peak (VO2peak (%pred)) in adults with PTLD investigated for surgery.

Results. Eighty-two patients (52 males, 30 females) with a mean (standard deviation (SD) age of 43.2 (SD) years (11.3) were included. Spirometric values of forced vital capacity (FVC) percentage predicted (%pred) and forced expiratory volume in 1 sec (FEV1) %pred suggested significant correlations with VO2peak (%pred) ($p<0.001$ and $p<0.001$, respectively), whereas FEV1/FVC did not. Diffusing capacity for carbon monoxide (DLCO) %pred also correlated significantly with VO2peak (%pred) ($p=0.002$). However, the magnitudes of all significant correlation coefficients were weak. No significant correlations for any plethysmographic values with VO2peak (%pred) could be robustly concluded. Correlations with VO2peak (ml/kg/min) for most physiological variables were less robust than for VO2peak (%pred).

Conclusion. Although statistically significant, the correlations between any measure of lung function and VO2peak or VO2peak (%pred) were weak, with only FVC correlation coefficient surpassing 0.50.

ADAMTS13 levels in COVID-19

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Introduction. To describe the role of an acquired ADAMTS13-deficiency in the coagulopathy associated with COVID-19.

Methods. In this single-centre, prospective, observational cohort study of 40 patients conducted in South Africa, we analysed the admission A Disintegrin And Metalloprotease with ThromboSpondin 1 repeats, number 13 (ADAMTS-13) antibody and activity, followed by the pattern of change activity change at 48 hours post admission. Two groups of patients were compared, those who showed stability or improvement in 48 hours, and those who did not show improvement or deteriorated in 48 hours

Results. The population were mostly black (93%), and two-thirds were female. The mean SOFA and SAPS2 scores were 3 and 24, respectively. The four blood types were well represented, with O type of 55%. Four of the samples demonstrated low levels of ADAMTS-13 antibodies. None had all five features of the pentad for TTP. The prevalence of low activity was 60% (activity level less than 67%) while none met the definition of severe hypo-activity. The impairment in ADAMTS-13 activity level was significantly associated with mortality, with *p*-values of 0.04. The final data are pending.

Conclusion. In this South African population, ADAMTS-13 hypo-activity was a highly prevalent phenomenon in COVID-19 disease.

A comparative study of COVID-19 and non-COVID-19 pneumonia using pulmonary ultrasound

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Introduction. Pulmonary ultrasound techniques have historically been applied to acute lung diseases, particularly in critical care, to describe lung lesions.

Methods. This study was an observational, prospective, single-centre study, including adults with hypoxic pneumonia, in two groups: COVID-19 pneumonia (COVID-19) and non-COVID-19 community-acquired pneumonia (CAP). A pulmonologist performed bedside lung ultrasound (LUS), and the findings were verified by an independent, study-blinded radiologist.

Results. We enrolled 48 patients with COVID-19 and 24 with non-COVID-19 CAP. COVID-19 patients were significantly older, with median age 52 years (IQR 42 - 62.5), $p=0.006$, with fewer HIV-positive patients, 25% v. 54% respectively, $p=0.01$, and a higher frequency of hypertension and diabetes. There was a trend towards a lower severity of illness score (SAPS II). The relative risk for COVID-19 patients developing ground glass (confluent B lines) in favour of consolidation (C pattern) in the right upper zone (right upper lobe) was 3.8 times higher (CI 1.7 - 8.6) than non-COVID-19 patients. The final data are pending.

Conclusion. The development of consolidation in the upper lobe is inconsistent with COVID-19 pneumonia. Pleural effusion is also a rare finding, and should prompt the clinician to investigate an alternate cause of the pneumonia

Pulmonary vein varix

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Introduction. Pulmonary vein varices (PV) are rare localised dilatations of the pulmonary veins, which can present incidentally as pulmonary nodules on conventional chest X-ray. Less than 100 cases have been described in the available literature, with no cases from sub-Saharan Africa.

Case. We describe a patient who presented with an incidental lung nodule which was subsequently proven to be a pulmonary varix, likely congenital.

Discussion. Pulmonary varices are generally described as being congenital or acquired. The clinical importance of this entity is in differentiating them from arterial venous malformations or non-benign lesions, in conjunction with the exclusion of underlying cardiac abnormalities, all of which require intervention and ongoing management. This is in contrast to PV, which generally require no treatment. The diagnosis of pulmonary varices involves contrast tomography pulmonary angiography (CTPA) which demonstrates the characteristic appearance and flow dynamics of these vascular structures.

Conclusion. Further work would include echocardiography to assess right-sided pressures and to exclude any structural cardiac abnormalities.