

Dear friends of clinical journal club - load the file down at <https://www.mdc-berlin.de/cjc>:

The *N Engl J Med* image of the week concerns a 41-year-old farmer, who presented with a 20-year history of slowly growing lesions on the right leg that progressed over time to cause gait abnormality. The lesions were initially painless, pruritic papules on the knee and gradually spread to the dorsum of the foot. Physical examination revealed palpable, coalescent, subcutaneous nodules with verrucous lesions and associated skin changes. What is the diagnosis? You are offered Verruca vulgaris (common warts), Hansen's disease (leprosy), Phytophotodermatitis, Epidermodysplasia verruciformis, and Chromoblastomycosis (hint, shown here is a "Madura" foot). Earlier, we learned in the Lancet that Covid-19 might cause a Kawasaki-Syndrome-like condition in children, now termed multisystem inflammatory syndrome of children (MIS-C). The New York State Department of Health (NYSDOH) established active, statewide surveillance to describe hospitalized patients with MIS-C. Hospitals in New York State reported cases of Kawasaki's disease, toxic shock syndrome, myocarditis, and potential MIS-C in hospitalized patients younger than 21 years of age and sent medical records to the NYSDOH. They carried out descriptive analyses that summarized the clinical presentation, complications, and outcomes of patients who met the NYSDOH case definition for MIS-C between March 1 and May 10, 2020. A total of 99 children were described. Although 32% of the patients had hypotension at admission, 62% (48% of those 0 to 5 years of age) received vasopressor support and 80% were admitted to an ICU. Notable findings were the high prevalence of cardiac dysfunction or depression, coagulopathy, and gastrointestinal symptoms, accompanied by mild respiratory symptoms and occasional indications for supplemental oxygen, in contrast to most cases of acute Covid-19 among hospitalized children. Patients were commonly treated with IVIG, glucocorticoids, and vasopressors. This constellation suggests an inflammatory vasculopathy, with some similarities to Kawasaki's disease and toxic shock syndrome. The center for disease control (CDC) conducted targeted surveillance for MIS-C from March 15 to May 20, 2020, in pediatric health centers across the United States. The case definition included six criteria: serious illness leading to hospitalization, an age of less than 21 years, fever that lasted for at least 24 hours, laboratory evidence of inflammation, multisystem

organ involvement, and evidence of infection with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) based on reverse-transcriptase polymerase chain reaction (RT-PCR), antibody testing, or exposure to persons with Covid-19 in the past month. The investigators describe 186 patients younger than 21 years of age who met the criteria for MIS-C associated with SARS-CoV-2 infection from across the United States. The majority of patients (70%) had laboratory-confirmed antecedent or concurrent SARS-CoV-2 infection, and most had no documented underlying conditions. Cardiovascular involvement was common, with almost half receiving vasopressor or vasoactive support and 1 in 12 having coronary-artery aneurysms. Most patients were cared for in an intensive care unit, and 20% received invasive mechanical ventilator support. Although most discharged patients survived, 28% were still hospitalized as of May 20, 2020, and 4 patients (2%) died, 2 of whom had previously been healthy. We may conclude, very few children infected with Covid-19 develop this disease and those who do generally recover. Obesity is a risk factor. Gastrointestinal symptoms are common and the heart is commonly involved. Kawasaki Syndrome has some similarities with this disease, as does toxic-shock syndrome. Conceivably, a “super”-antigen phenomenon is involved. Treatments used involved immune globulins, salicylates, and anti-cytokine agents. Pneumonia is the commonest cause of death in young children worldwide. We next inspect two studies using amoxicillin in “chest-indrawing” pneumonia. Most are probably caused by viruses such as respiratory syncytial virus. The first study in Malawi randomized the children to 3 or 5 days of amoxicillin. In this study, the results of the two treatments were not different. In the second study, Pakistani children were given amoxacillin for 3 days or placebo. In this study, amoxacillin resulted in fewer treatment failures. The current WHO recommendations are not likely to be altered by these studies. Triple fixed-dose regimens of an inhaled glucocorticoid, a long-acting muscarinic antagonist (LAMA), and a long-acting β_2 -agonist (LABA) for chronic obstructive pulmonary disease (COPD) have been studied at single dose levels of inhaled glucocorticoid, but studies at two dose levels are lacking. We inspect a large, 4-arm trial. Butasonide + a muscarinic antagonist, and long-acting beta agonist resulted in fewer COPD exacerbations and was better than the 2-drug regimens. Nevertheless, pneumonia developed more commonly in the steroid-treatment regimens (as shown earlier).

Virginia Apgar, whom I had the privilege of hearing lecture as a medical student, introduced the universally used scoring technique (Apgar score) to assess newborn infants, based on respiration, heart rate, muscle tone, skin color and reflexes with a maximum score of 10. In Scandinavia, investigators used the Apgar score to assess neonatal mortality (first 28 days) in children across prematurity ranges from 22-36 weeks. Apgar scores were a robust predictor across gestational ages. The weekly review is about bipolar disorders. The patient of the week is a 57 year-old man with a strange cachectic condition that lowered his BMI from 24 to 16.6. A duodenal biopsy showed peculiar PAS-positive intracellular inclusion bodies. In the *Lancet*, we learn about mortality and pulmonary complications in patients undergoing surgery with perioperative Covid-19. We next inspect a large randomized trial of ambulatory primary spontaneous pneumothorax management (Heimlich valves) versus hospitalization and chest-tube drainage in patients with spontaneous pneumothorax and symptoms. Thulium laser transurethral resection may cause less morbidity and result in better outcomes than conventional transurethral resection (TURP). We inspect a randomized trial of 410 men with benign prostatic hypertrophy. Both treatments relieved symptoms although patients with conventional TURP had a faster urine flow rates. The *Lancet* review is on active case finding and case management to tackle Covid-19 in China. A *Lancet respiratory medicine* review is about managing acute kidney injury in Covid-19 patients. We then inspect a *Cell* paper on a SARS-CO-V2 mouse infection model and protection via neutralizing antibodies. Finally, a *Lancet* case involves a pregnant woman with severe hypertension but hardly palpable lower-extremity pulses. The oral presentations will be in Wednesday at 16.00 English and 17.00 German.

Yours,

Fred Luft (Check out the file pdf at <https://www.mdc-berlin.de/cjc>)