USET COVID-19 ECHO

May 15, 2020

Because there is Strength in Unity

Nashville Area COVID-19 Epidemiology

27 Sites Reporting		
Number Tested	Number Positive	Number Negative
3465 (2798)	312 (224)	2873 (2277)

Because there is Strength in Unity

How can we best help you?

- What tools can we provide or improve upon?
- What are your greatest challenges during this pandemic?
- Where do you feel most supported?
- Where do you feel least supported?

Because there is Strength in Unity

Questions?

To request a REDCap account and get access to the USET TEC COVID-19 Surveillance Tool or for general assistance please contact us at usetepi@usetinc.org

Thank You!

Because there is Strength in Unity

Kawasaki Disease and Covid-19

ECHO Presentation

May 15, 2020

Harry J Brown, MD

USET Tribal Epidemiology Center

Because there is Strength in Unity

Today's Agenda

- Kawasaki Disease
- Pediatric Multi-System Inflammatory Syndrome associated with Covid-19
- New Antigen Test for Covid-19

Kawasaki Disease

- Dr. Tomisaku Kawasaki described mucocutaneous lymph node syndrome in Japan in 1967
- Published article in English in *Pediatrics* in 1974
- One of the most common types of vasculitis in children
- Systemic inflammatory response affecting medium-sized arteries, particularly the coronary arteries

use there is Strength in Unity

UNITED SOUTH AND EASTERN TRIBES, INC.
Established 1969

Kawasaki Disease - Epidemiology

- Most common in children from 6 months to about 5 years of age
- More common in people of Asian descent
- In the US, there is a winter-spring predominance
- In Japan, most prevalent in the winter, with a smaller peak in the summer months
- In Japan, 10-fold increased risk in siblings
- Postulated that there is a genetic predisposition with an infectious trigger, but no definite single causal agent found to date

Kawasaki Disease - Pathogenesis

- Usually a prodromal illness a week to 10 days before the onset of KD
- GI and Respiratory prodrome most common
- Diarrhea, abd pain, vomiting
- Cough, rhinorrhea
- Irritability, decreased appetite and oral intake
- Joint pain

Kawasaki Disease – Clinical Features

- Fever – 5 days or more, usually >38.5 (101.3)

1) Conjunctivitis – nonexudative
2) Oral mucositis
3) Rash
4) Extremity changes – erythema, edema, desquamation
5) Lymphadenopathy

- Cardiac – myocarditis, coronary artery aneurysms

UNITED SOUTH AND EASTERN TRIBES, INC.
Established 1969

Because there is Strength in Unity

Conjunctivitis

Copyrights apply

Because there is Strength in Unity

Cracked, red lips seen in Kawasaki disease

Reproduced with permission from: www.visualdx.com. Copyright VisualDx. All rights reserved.

UpToDate®

Copyrights apply

Because there is Strength in Unity

UNITED SOUTH AND EASTERN TRIBES, INC. Established 1969

Indurated edema of the dorsum of the hands as seen in Kawasaki disease (acute phase)

The erythema overlying the metacarpophalangeal and proximal interphalangeal joints is indicative of arthritis of the small joints of the hand.

Reproduced with permission from: www.visualdx.com. Copyright VisualDx. All rights reserved.

UpToDate®

Copyrights apply

Because there is Strength in Unity

UNITED SOUTH AND EASTERN TRIBES, INC.
Established 1969

Characteristic periungual desquamation of the hands and feet seen in Kawasaki disease

Skin peeling usually begins under the nails during the second week of illness. Peeling of large sheets of skin progresses proximally over the next several days.

UpToDate®

Copyrights apply

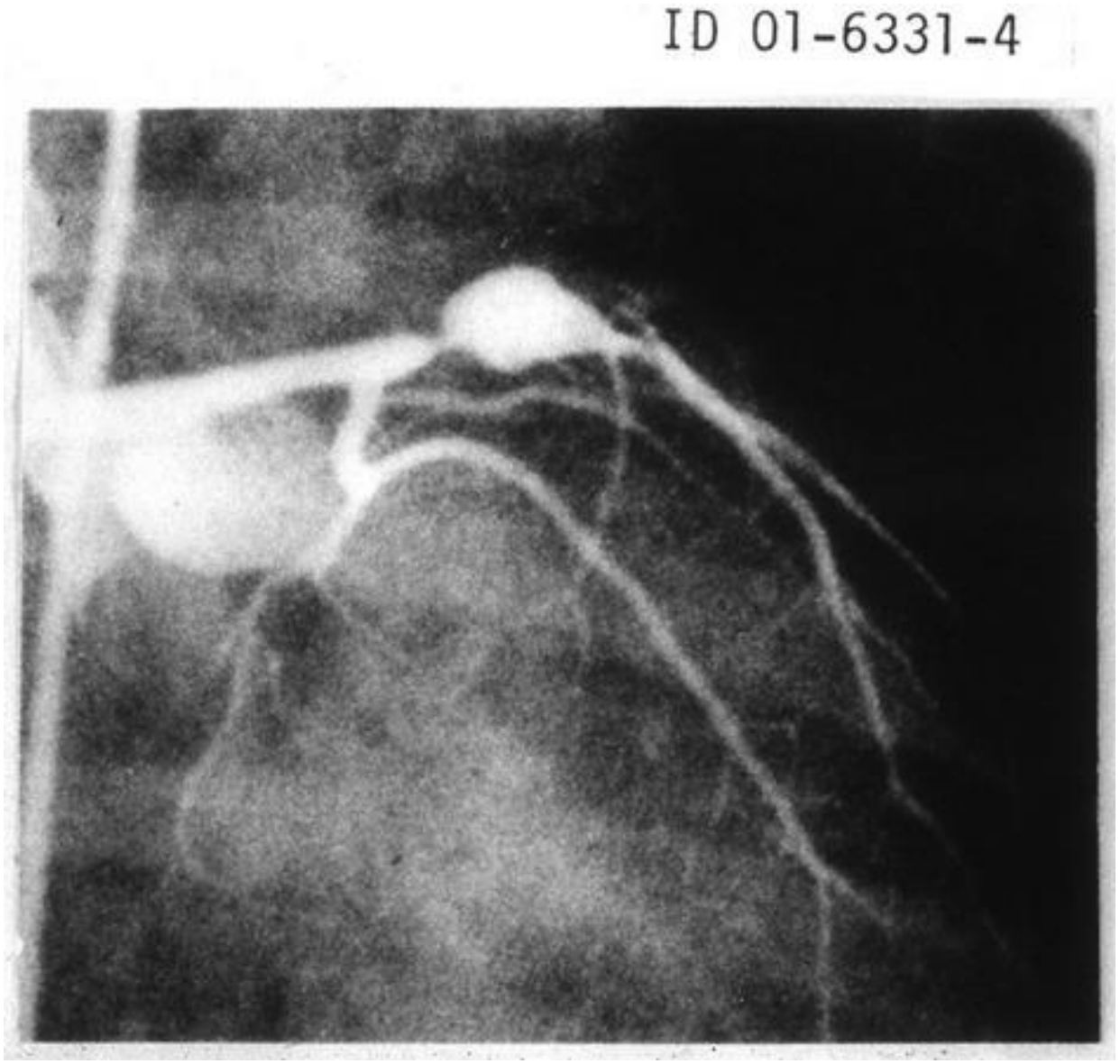
Because there is Strength in Unity

UNITED SOUTH AND EASTERN TRIBES, INC. Established 1969

KD Rash

- 70 to 90% of cases
- Macular
- Morbiliform
- Target lesion-like
- Psoriaform

Kawasaki disease



International Journal of Rheumatic Diseases, Volume: 17, Issue: 5, Pages: 597-600, First published: 14 July 2014, DOI: (10.1111/1756-185X.12408)

Because there is Strength in Unity

UNITED SOUTH AND EASTERN TRIBES, INC.
Established 1969

Kawasaki Disease – Laboratory and Imaging

- Elevated acute phase reactants
- Elevated WBC
- Reactive thrombocytosis
- Anemia
- Elevated transaminases
- Sterile pyuria
- Hyponatremia
- Imaging - Echocardiogram

Kawasaki Disease - Diagnosis

- Fever for at least 5 days, plus 4/5:

    1) Bilateral conjunctival injection
    2) Oral mucositis
    3) Peripheral extremity changes – erythema, edema, desquamation
    4) Polymorphous rash
    5) Cervical lymphadenopathy

- If less than 4/5, may have incomplete (atypical) KD
- Lab can be very helpful in these cases

Kawasaki Disease – Differential Diagnosis

- Viral illness – measles, echovirus, adenovirus, Epstein Barr
- Group A strep – scarlet fever, toxic shock syndrome
- Rocky Mountain Spotted Fever
- Leptospirosis
- Stevens-Johnson syndrome
- Serum sickness
- Systemic Juvenile Idiopathic Arthritis

Kawasaki Disease - Complications

- Cardiac
  - Coronary Artery Aneurysms
  - Myocarditis
  - Pericarditis
- KDSS – Kawasaki Disease Shock Syndrome
- MAS – Macrophage Activation Syndrome

Kawasaki Disease - Treatment

- IVIG – intravenous immune globulin
- Aspirin
- +/- Steroids (glucocorticoids)

Multi-System Inflammatory Syndrome associated with Covid-19 in Children

- Italy – Bergamo province: 10 children with KD-like between 2/18 and 4/20 (30-fold increase in incidence)
- United Kingdom – cluster of 8 children in London hospital with hyperinflammatory shock and features of KD during April
- New York City – 15 children with KD, incomplete KD, toxic shock between 4/17 and 5/1

Kawasaki-like Disease and Covid-19

- Tend to be older than average KD
- Boys predominate
- Many were PCR negative, but serology positive
- Those meeting KD criteria should be treated with IVIG
- Steroids if indicated

First Antigen Test in US: Quidel Sofia 2 SARS Antigen FIA

May 15, 2020

Because there is Strength in Unity

SARS Antigen Test

- First antigen test to receive FDA EUA on May 8, 2020
- CLIA-waived, point of care test
- Lateral Flow Immunofluorescent Assay
- Requires Sofia 2 analyzer (~$4800)
- Tests for SARS-CoV-2 nucleocapsid protein antigen
- Results in about 15 minutes

Because there is Strength in Unity

UNITED SOUTH AND EASTERN TRIBES, INC.
Established 1969

SARS Antigen Test

- Performance Compared to PCR, based on 2 studies:
  - 80% Sensitivity (1 in 5 false negatives)
  - 100% Specificity (no false positives)

- Tested specifically for other human coronaviruses, and no cross-reactivity found

- Are there any advantages to this test?