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# CIDS Newsletter

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## Editor's note

Dear CIDS members

See you at Nagpur where an excellent academic program awaits us.

Please register for the pre-conference workshop on 17th August, involving various aspects of infection control. Registration is free for those registered for the conference. Details are on the conference website www.cidscon.in.

Sincerely

Ram Gopalakrishnan

## Photo quiz

A 43 years old male presented with moderate grade fever, sore throat and dry cough for 10 days. Physical examination was unremarkable. Investigations revealed normal hemogram, ESR 65 mm, normal LFT and RFT, normal chest x-ray, normal ultrasound abdomen, negative urine and blood cultures, and negative viral markers. He was treated empirically with antibiotics. After 10 days, he reported pain in the neck radiating bilaterally to angle of jaw. Physical examination was normal. TLC was 17,500 with 90% polymorphs. He was again treated with I/V antibiotics for 7 days. He continued to have mild grade fever and neck pain. Investigations revealed TLC 11,500 with 70% polymorphs, ESR 110.

What is your diagnosis?

# News from the ID world

## Tamil Nadu reports first Zika virus from Krishnagiri district

The first case of Zika virus in Tamil Nadu has been reported from Krishnagiri district and the 27-year-old infected man fully cured. He was treated at the primary health care centre in Anjetty at remote Denkanikottai Taluk of Krishnagiri district. The affected man did not visit any other country, but had only visited neighbouring states and that too, three months earlier.

The Union Health and Family Welfare ministry had reported three laboratory-confirmed cases of Zika virus in Ahmedabad in May.

## FDA approves new fluoroquinolone antibiotic to treat bacterial skin infections

(courtesy Dr Surabhi Madan)

On 19th June, the U.S. Food and Drug Administration approved Baxdela (delafloxacin) to treat acute bacterial skin and skin structure infections caused by various gram-positive and gram-negative pathogens, including *Staphylococcus aureus* (methicillin-resistant [MRSA] and methicillin-susceptible [MSSA] strains), *S. haemolyticus*, *S. lugdunensis*, *Streptococcus pyogenes*, *S. agalactiae*, *S. anginosus* group, *Enterococcus faecalis*, *Escherichia coli*, *Klebsiella pneumoniae*, *Enterobacter cloacae*, and *Pseudomonas aeruginosa*. In two phase III, randomized, double-blind, multicenter trials totaling 1510 patients treated for 5 to 14 days, delafloxacin was noninferior to vancomycin 15 mg/kg plus aztreonam. Recommended doses of delafloxacin are 300 mg (200 mg for patients with creatinine clearance 15–29 mL/min) every 12 hours (intravenous) and 450 mg every 12 hours (oral).

The broad antibacterial spectrum of delafloxacin may prove very useful for polymicrobial infections, particularly in outpatients. However, such broad activity may result in overuse by anxious empirically treating clinicians. When treating ABSSSI in immunocompetent patients, the vast majority of pathogens are gram-positive; *S. aureus* predominates in purulent infections with abscess and streptococci in nonpurulent cellulitis. It is unclear whether the drug will be needed in India where many options are present for SSTI.

## FDA approves new IGRA to detect latent TB

(courtesy Dr Surabhi Madan)

QIAGEN N.V. received FDA approval for the use of QuantiFERON-TB Gold Plus, the newest generation of the market-leading blood test for detecting latent tuberculosis, in the U.S. Building on the foundation of the third-generation leading interferon gamma release assay (IGRA) version, QuantiFERON-TB Gold Plus (QTF-Plus) will incorporate CD8+ T cell response data to better detect latent TB infection before it develops into active disease.

Obviously the test is not for detecting active TB.

# Snippets from the literature

## Effect of Cephalexin Plus Trimethoprim-Sulfamethoxazole vs Cephalexin Alone on Clinical Cure of Uncomplicated Cellulitis: A Randomized Clinical Trial.

(courtesy Dr Surabhi Madan)
JAMA 2017; 317:2088.

Empiric antibiotic therapy for nonpurulent cellulitis should be active against beta-hemolytic streptococci and methicillin-susceptible *Staphylococcus aureus* (MSSA) but not necessarily methicillin-resistant *S. aureus* (MRSA). This approach is supported by a randomized trial of nearly 500 patients with nonpurulent cellulitis, in which cephalexin plus placebo and cephalexin plus TMP-SMX, which adds activity against MRSA) resulted in statistically similar clinical cure rates (69 versus 76 percent).

## Antibiotic prescription strategies and adverse outcome for uncomplicated lower respiratory tract infections: prospective cough complication cohort (3C) study.

(courtesy Dr Surabhi Madan)
BMJ 2017; 357:j2148

A prospective cohort study assessing over 28,000 adults with acute cough lasting <3 weeks without radiographic evidence of pneumonia found no difference in rates of major complications, including hospital admission and death, when comparing patients given immediate antibiotic prescriptions with delayed prescription or no prescription. This study adds further support for the lack of benefit for routine use of antibiotics for patients with acute bronchitis and can be used to reassure patients that they are not more likely to develop complications if they are not treated with antibiotics

## Incidence of active tuberculosis in individuals with latent tuberculosis infection in rural China

http://www.thelancet.com/journals/laninf/article/PIIS1473-3099(17)30402-4/fulltext?elsca1=etoc

A population-based multicentre prospective study was done in four sites in rural China, between 2013 and 2015. The baseline survey in 2013 measured the prevalence of latent tuberculosis infection using QuantiFERON-TB Gold In-Tube (QFT) and tuberculin skin test (TST) in eligible participants. During the follow-up phase between 2014–15, we assessed individuals who had tuberculosis infection at baseline (QFT-positivity or TST tuberculin reaction size [induration] of ≥10 mm) for the development of active disease through active case finding. Of participants who developed active tuberculosis, 75 were diagnosed with latent infection by QFT, 62 were diagnosed by TST, and 53 were diagnosed by both tests. An incidence rate of 0·87 (95% CI 0·68–1·07) per 100 person-years was observed for individuals who tested positive with QFT, 0·50 (0·38–0·63) per 100 person-years for those who tested positive with TST (p<0·0001), and 0·82 (0·60–1·04) per 100 person-years for those who tested positive with both tests.
It appears that IGRA is a little better than TST in predicting future development of active TB.

## Device-Associated Infection Rates in 20 Cities of India, Data Summary for 2004-2013: Findings of the International Nosocomial Infection Control Consortium.

Infect Control Hosp Epidemiol. 2016 Feb;37(2):172-81. doi: 10.1017/ice.2015.276. Epub 2015 Nov 26.

The authors collected data from 236,700 ICU patients for 970,713 bed-days. Pooled device-associated healthcare-associated infection rates for adult and pediatric ICUs were 5.1 central line-associated bloodstream infections (CLABSIs)/1,000 central line-days, 9.4 cases of ventilator-associated pneumonia (VAPs)/1,000 mechanical ventilator-days, and 2.1 catheter-associated urinary tract infections/1,000 urinary catheter-days. In neonatal ICUs (NICUs) pooled rates were 36.2 CLABSIs/1,000 central line-days and 1.9 VAPs/1,000 mechanical ventilator-days. Extra length of stay in adult and pediatric ICUs was 9.5 for CLABSI, 9.1 for VAP, and 10.0 for catheter-associated urinary tract infections. Extra length of stay in NICUs was 14.7 for CLABSI and 38.7 for -

for VAP. Crude extra mortality was 16.3% for CLABSI, 22.7% for VAP, and 6.6% for catheter-associated urinary tract infections in adult and pediatric ICUs, and 1.2% for CLABSI and 8.3% for VAP in NICUs Pooled device use ratios were 0.21 for mechanical ventilator, 0.39 for central line, and 0.53 for urinary catheter in adult and pediatric ICUs; and 0.07 for mechanical ventilator and 0.06 for cent-

-ral line in NICUs.

Despite a lower device use ratio in our ICUs, our device-associated healthcare-associated infection rates are higher than National Healthcare Safety Network, but lower than International Nosocomial Infection Control Consortium Report. These numbers are useful benchmarks for Indian hospitals.

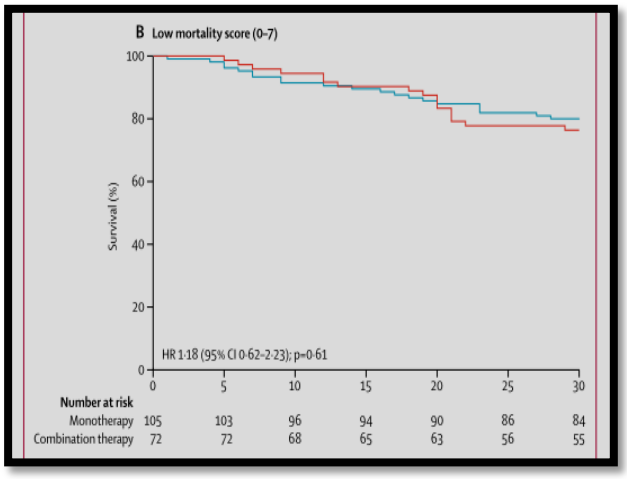
## Combination therapy for bacteremia due to carbapenemase producing Enterobacteriaceae (INCREMENT)

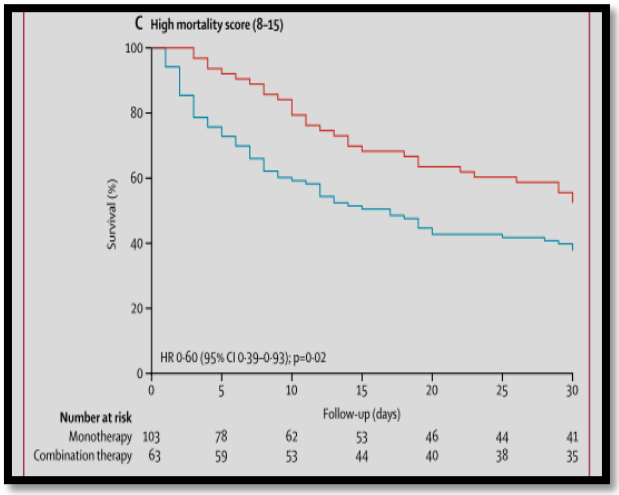
(courtesy Dr Pratik Patil)

Lancet Infect Dis 2017; 17: 726–34

- retrospective cohort study,
- patients with clinically significant monomicrobial BSIs due to CPE
- 26 tertiary hospitals in ten countries from Europe and USA.
- 30 day all-cause mortality between patients receiving appropriate (including an active drug against the blood isolate and started in the first 5 days after infection) or inappropriate therapy, and for patients receiving appropriate therapy, between those receiving active monotherapy (only one active drug) or combination therapy (more than one).
- Very few patients had NDM-1 carbapenemase infections, though some had OXA-48 which is also seen in India

| | Appropriate therapy (n=343) | Inappropriate therapy (n=94) | p value |
|---|---|---|---|
| Age (years) | 66 (55·5–76·0) | 66 (50–77) | 0·76 |
| Male sex | 197 (57%) | 58 (62%) | 0·46 |
| Enterobacteriaceae | .. | .. | 0·27 |
| *Klebsiella pneumoniae* | 291 (85%) | 84 (89%) | .. |
| Other | 52 (15%) | 10 (11%) | .. |
| *Enterobacter cloacae* | 24 (7%) | 4 (4%) | .. |
| *Escherichia coli* | 14 (4%) | 3 (3%) | .. |
| *Enterobacter aerogenes* | 10 (3%) | 3 (3%) | .. |
| *Citrobacter* spp | 3 (1%) | 0 | .. |
| *Serratia marcescens* | 1 (<1%) | 0 | .. |
| Type of carbapenemase | .. | .. | 0·64 |
| OXA-48 | 57 (17%) | 12 (13%) | .. |
| KPC | 253 (74%) | 76 (81%) | .. |
| Metallo-β-lactamases | 33 (10%) | 6 (6%) | .. |
| VIM | 30 (9%) | 6 (6%) | .. |
| Other | 3 (1%) | 0 | .. |
| Nosocomial acquisition | 298 (87%) | 87 (93%) | 0·13 |
| Source other than urinary or biliary tract | 272 (79%) | 76 (81%) | 0·74 |
| Vascular catheter | 87 (25%) | 13 (14%) | .. |
| Pneumonia | 34 (10%) | 9 (10%) | .. |
| Intra-abdominal | 37 (11%) | 7 (7%) | .. |
| Skin and skin structures | 11 (3%) | 5 (5%) | .. |
| Other | 10 (3%) | 3 (3%) | .. |
| Unknown | 93 (27%) | 39 (41%) | .. |



- Interpretation: appropriate therapy was associated with a protective effect on mortality among patients with BSIs due to CPE. Combination therapy was associated with improved survival only in patients with a high mortality score. Patients with BSIs due to CPE should receive active therapy as soon as they are diagnosed, and monotherapy should be considered for those in the low-mortality-score stratum.

The applicability of this study to the Indian setting is limited by the virtual absence of isolates producing NDM-1 and its retrospective nature. Prospective studies are awaited.

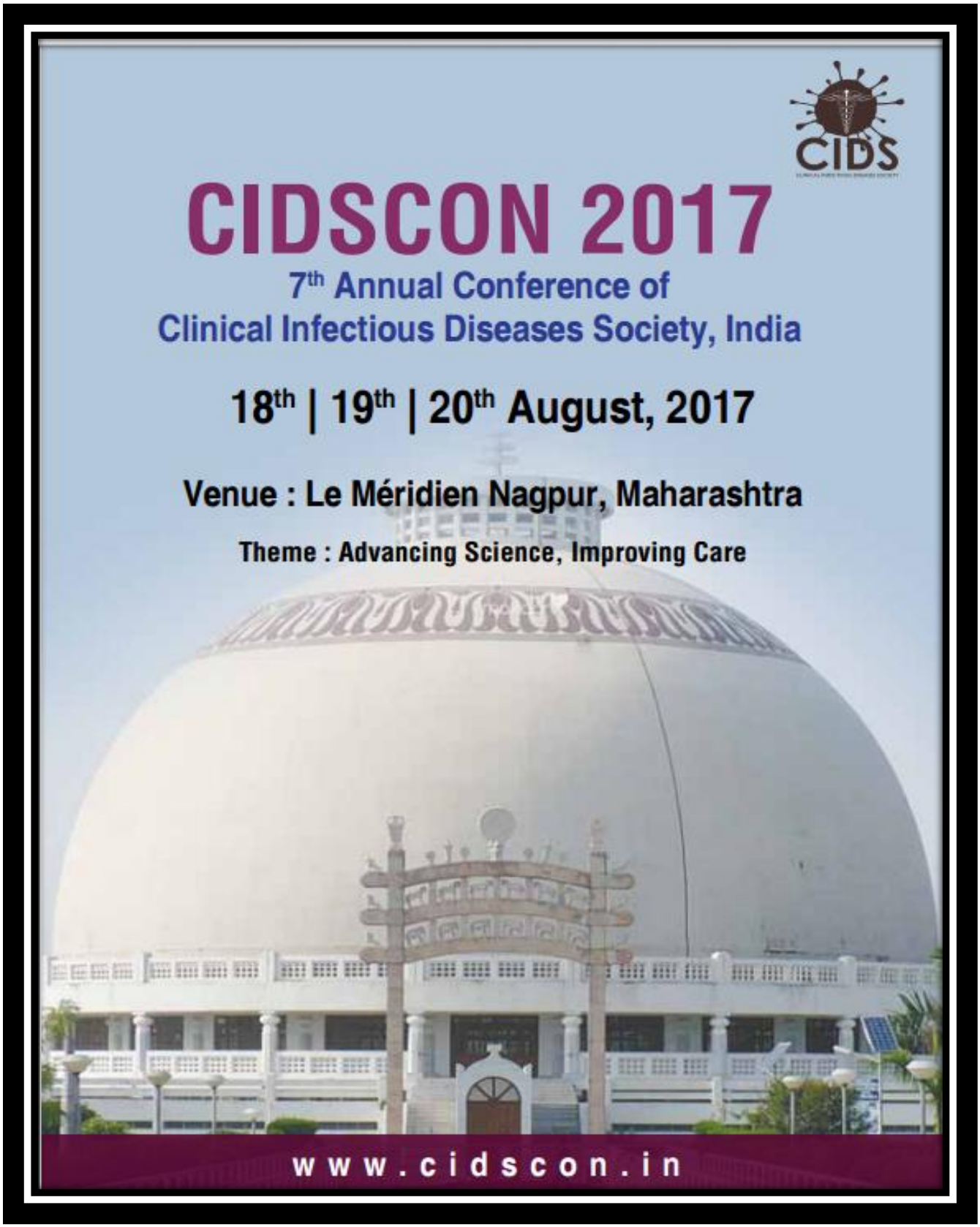
## Answer to photo quiz:

T3 level was 209 (NR 60-200 ng/dl), T4 was 15.80 (NR 4.5 -12 µg/dl) and TSH was 0.08 (NR 0.30-5.50 µU/ml). Anti- TPO and antithyroglobulin antibodies were negative. Neck ultrasound showed diffuse enlargement of thyroid with both lobes showing multiple ill defined hypoechoic areas and enlarged left cervical lymph nodes. FNAC of thyroid revealed mild inflammation with normal morphology of native cells. Gram's staining of aspirate was negative and culture sterile. Thyroid scintiscan showed no uptake of technetium.

This clinical picture was diagnostic of subacute thyroidits. The patient was treated with Naproxen 500mg TID for 15 days and gradually tapered. Patient became afebrile and asymptomatic. Thyroid function tests repeated after 6 months were normal.

Subacute thyroiditis (*de Quervain's thyroiditis*) should be considered a cause of pyrexia of unknown origin where the patient has throat pain or neck pain along with fever. It is presumed to be caused by a viral infection or postviral inflammatory process. It is characterized by neck pain, usually a tender diffuse goiter, and thyrotoxicosis.

Final diagnosis: Subacute thyroiditis (case courtesy Dr Amarjit Singh Vij)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