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CIDS Newsletter

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CLINICAL INFECTIOUS DISEASES SOCIETY

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Editor's note

Dear CIDS members

Hope all of you have registered for CIDSCON in Varanasi on Aug 26-28. Please plan on attending the annual general body meeting scheduled for 27th evening.

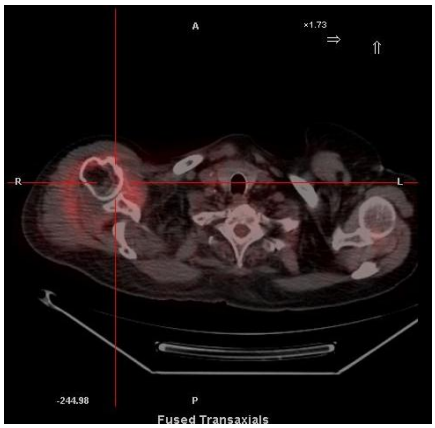
This issue features an opinion piece on an aspect of Infectious Diseases relevant to us: such contributions from all members are welcome.

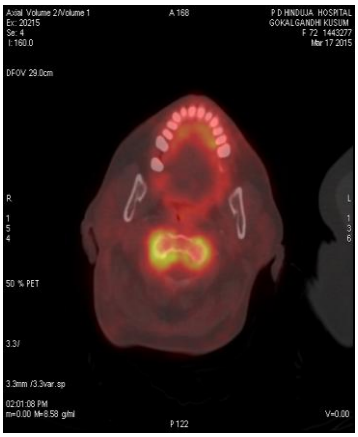
Sincerely

Ram Gopalakrishnan

Photo quiz

A 72/F with a past medical h/o diabetes, Ca breast and Ca endometrium presented with complaints of fever for two weeks, followed by severe neck and right shoulder pain and altered mental status. She then had a fall, which caused worsening of her pre-existing right shoulder pain. MRI of the right shoulder joint showed rotator cuff tear. MRI cervical spine showed cervical spondylosis with no clear evidence of osteomyelitis. PET scan (shown) showed uptake of 7 SUV in area of C1-C2, as compared to uptake of 3 SUV in right shoulder periarticular tissue. TEE did not reveal any vegetations.





What is your diagnosis?

Snippets from the literature

A blood RNA signature for tuberculosis disease risk: a prospective cohort study

Lancet Volume 387, No.10035, p2312-2322, 4 June 2016

This study from Africa looked at prospective signatures of risk that could be identified in healthy individuals up to 2 years before clinical tuberculosis disease manifests. A 16 gene signature of risk was identified and predicted tuberculosis progression with a sensitivity of 66·1% (95% CI 63·2–68·9) and a specificity of 80·6% (79·2–82·0) in the 12 months preceding tuberculosis diagnosis. This risk signature was subsequently validated in a group of adolescents.

Less than 10% of latently infected individuals will progress to have active tuberculosis disease during their lifetime. Instead of treating all these patients with chemopoprophylaxis, this opens up the possibility for targeted intervention to prevent the disease.

Efficacy of a Single-Dose, Inactivated Oral Cholera Vaccine in Bangladesh

N Engl J Med 2016; 374:1723-1732 May 5, 2016
DOI: 10.1056/NEJMoa1510330

These investigators from Dhaka conducted an efficacy trial of a single dose of the killed oral cholera vaccine Shanchol, which is currently given in a two-dose schedule. The vaccine protective efficacy was 40% against all cholera episodes, 63% against severely dehydrating cholera episodes, and 63%, 56, and 16% against all cholera episodes among persons vaccinated at the age of 5 to 14 years, 15 or more years, and 1 to 4 years, respectively.

A single dose of the oral cholera vaccine was efficacious in older children (≥5 years of age) and in adults in a setting with a high level of cholera endemicity. Interestingly, though the vaccine is efficacious and made in India, there is no consensus on the use of this vaccine in endemic or epidemic settings in this country.

Papaya leaf extracts for dengue?

J Assoc Phy India June 2016 Vol 16

Two studies examined the role of Carica papaya leaf extract (CPLE) in the treatment of non-severe dengue with platelet counts >30,000. The therapeutic effects of Carica papaya leaves are presumed to be due to several active components such as papain, chymopapain, cystatin, L-tocopherol, ascorbic acid, flavonoids, cyanogenic glucosides and glucosinolates. Animal studies suggest that papaya leaf extracts have potential therapeutic effect on disease processes causing destabilization of biological membranes as they inhibit hemolysis in vitro. CPLE is shown to increase expression of ALOX 12 and PTAFR gene responsible for platelet production and may cause increased platelet and red blood cell counts.

The first randomized multi-center study showed few adverse effects and a significant increase ($p<0.01$) in the platelet count with a dose of 1100mg thrice daily over the therapy duration (5 days). There was improvement in platelet count from day 2 and by day 5 the difference between the two groups was significant. The second single center study showed similar effects with a dose of 500 mg once daily.

The main drawback of these studies is that they did not include patients with severe dengue or platelet counts <30,000, who constitute the bulk of morbidity and mortality. Further studies, including dose ranging studies, in this sicker hospitalized population are needed.

ART at first visit itself?

PLoS Med 2016 May 10; 13:e1002015

In this study conducted at two public clinics in South Africa, newly diagnosed HIV+ patients were randomly assigned to immediately start ART (using rapid point-of-care laboratory testing and an accelerated sequence of clinical assessment and education) or to the standard schedule, typically -

involving three to five additional clinic visits over 2 to 4 weeks. Significantly more patients were in care and virally suppressed at 10 months in the rapid-initiation arm than in the standard-therapy arm (64% vs. 51%; relative risk, 1.26).
"ART is never an emergency" is a favored quote of senior HIV physicians. This study suggests that this may not always be true in settings where there is a significant likelihood of loss to follow up.

Is FMT the answer for our problems with MDR-O?

Clin Infect Dis 2016 62: 1479-1486

Fecal microbial transplant (FMT) is approved for the treatment of recurrent CDI. In this small study 20 patients underwent FMT via colonoscopy for recurrent CDI. Reduction in the diversity and number of resistance genes in patients' microbiota (ie, resistome) following FMT was noted.

Treatment with antibiotics eliminates not only pathogenic but also beneficial bacteria, resulting in severe disruption of the intestinal microbiota for an extended period of time (>6 months).

Will allo or auto-FMT will one day be used to decolonize our ESBL or CRE patients?

Opinion

Gene xpert from formalinized specimen

(Courtesy by Dr. Mitesh Suthar, Dr. Viral Shah)

In recent times, it is not enough to make a histological diagnosis of TB lymphadenitis. As resistant TB is so common, it is important to demonstrate the susceptibility or resistance of MTB to optimize the management. However, the lymph node that is excised is often put into formalin for histopathogy only, due to failure to recognize the importance of genetic resistance tests, culture & DST.

We observed that in a suspected case of multidrug resistance TB lymphadenopathy, the lymph node was sent, as is so often the case,in a sterile formalin container for gene expert, TB MGIT culture and histopathology. The tissue was in formalin for 4 hours, was not properly fixed or hard. Realizing that the required tests had not been sent, the lymph node was removed from formalin and normal saline wash was given 4 times. Each wash was of 5 minutes duration.The node was then processed for Xpert MTB/RIF. The result was positive for MTB complex and rifampicin resistance was not detected.

When a 'formalinized' specimen is used, there may be a possibility of false resistance as the denaturized molecular patterns may not be recognized by the probes used in the test. It is unlikely that a formal study to find the over-estimation of resistance will ever be done as such specimens will be considered unacceptable for the test. However, for some time at least, physicians in India will have to be "jugaadu' since our surgical colleagues will continue to use formalin as the only medium for transport. It may be worth doing a study of bisecting lymph nodes, immersing one half in formalin,followed by washing & carrying out tests. Comparing the yield of the test with the other half of the specimen, which is not immersed in formalin will be helpful.

On the basis of our observation of one case, we conclude that it is worth washing the lymph node & other specimens for tests such asXpertMTB/RIF when repeated excision biopsies will be difficult.

Guideline watch

AASLD 2016 guidelines for treatment of chronic hepatitis B

http://onlinelibrary.wiley.com/doi/10.1002/hep.28156/full

Many features are new including the following recommendation

- not to treat patients with normal ALT in the immune tolerant phase
- for a finite duration of therapy in eAg positive patients who seroconvert
- to treat pregnant patients with a viral load >200,000 in the third trimester.

Answer to photo quiz

Blood cultures grew *Streptococcus agalactiae.* In view of isolation of this organism and the predilection it has to cause osteomyelitis and endocarditis, PET scan and TEE were done.

The presence of mental changes, without any focal neurological deficit, raised the possibility of *S.agalactiae* associated encephalopathy. However hyponatremia was found, which was secondary to diuretics that the patient was taking. Correction of the same reversed the mental changes. Vertebral osteomyelitis at C1-C2 is highly significant due to the likelihood of dislocation and instability of the spine at that level. Dynamic MRI did not reveal any spine instability and so surgical intervention was not needed. The patient was treated with three weeks intravenous ampicillin -2gm QDS, followed by 500 mg QDS of oral amoxicillin for 3 weeks. Spine immobilization with collar was done.

S.agalactiae (group B streptococcus) is an unusual cause of primary bacteremia. It is a colonizer in the lower GI tract and vagina. It is known to cause neonatal sepsis, meningitis and puerperal sepsis.
Conditions associated with increased risk of infection with this microorganism include diabetes mellitus, malignancy, age above 65 years, chronic liver disease, alcohol abuse, chronic kidney disease, stroke, dementia and HIV. The first three risk factors were present in our patient.
Primary group B streptococcal bacteremia has a high case fatality rate (5%-25%) and a recurrence rate of 4 %. It has a propensity to cause widespread illness especially endocarditis, osteomyelitis and encephalopathy.
Treatment of bacteremia includes intravenous penicillin for 2 weeks, and in presence of endocarditis or osteomyelitis treatment duration is extended to 4-6 weeks.

Final diagnosis: *S.agalactiae* primary bacteremia with C1-C2 osteomyelitis, shoulder injury and hyponatremia

(case provided by Dr Vidyullata Koparkar and Dr Rajeev Soman).


CIDS
CIDSCON - 2016
6th Annual Conference of
Clinical Infectious Diseases Society, India
Venue : Banaras Hindu University, Varanasi, Uttar Pardesh
Block your Dates
26th, 27th, 28th, August
2016
Varanasi, India.
Organising Chairman :
Dr.Shyam Sundar
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