

Reports on Scientific Meeting

American Academy of Dermatology 2019 Annual Meeting

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Date: 1-5 March 2019
Venue: Walter E. Washington Convention Center, USA
Organiser: American Academy of Dermatology

U025 – Sex, Sores, Science, and Surveillance: Syphilis in the 21st Century

Speaker: K Ghanem

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A cross-sectional clinic-based study has shown that the clinical presentation of early syphilis is altered in patients with Human Immunodeficiency Virus infection (HIV) who do not have concomitant herpes simplex infection. In these cases, multiple anogenital sores are common.

For syphilitic hepatitis, early stage asymptomatic involvement with a disproportionately elevated alkaline phosphatase in up to 38% cases in the setting of secondary syphilis is a more recent observation; however this is not universal. Histology is pericholangiolar inflammation with spirochaetes in the necrotic foci, walls of sinusoids, and in the endothelial cells in half of the cases.

Clinical experience suggests that an interval of 10-

14 days between doses of benzathine penicillin for late latent syphilis or syphilis of unknown duration might be acceptable before restarting the sequence of injections if a weekly dose is missed except in pregnant women. On the other hand, pharmacological considerations suggest that an interval of 7 to 9 days between doses, if feasible, may be more optimal. Pregnant women who miss any dose of therapy must repeat the full course of therapy.

Doctors should ask about and assess for neurological, ocular, optic signs and symptoms in every patient with syphilis disregard the stage of infection. Every part of the eye can be involved during any stage of the infection, and 30-40% of persons with ocular syphilis will have a normal CSF examination. One should use the same regimen as neurosyphilis EVEN IF THE LUMBAR PUNCTURE IS NORMAL, while the use of steroids is controversial. Orosyphilis is a presumptive diagnosis in case of cochleovestibular dysfunction (~50% bilateral) and syphilis infection without an alternate diagnosis, and CSF examination is normal in 90% of cases.

Treatment of syphilis is not impacted by HIV status as the available data suggest that enhanced therapy (e.g. additional doses of benzathine penicillin) for HIV-infected persons with syphilis does not improve outcomes.

Serofast state/seroresistance is the absence of a four-fold decline in non-treponemal titres following

therapy and CDC recommends cerebrospinal fluid (CSF) examination in this group if there is no evidence of reinfection. In 74.3% (26/35) of the patients with latent syphilis who failed to achieve serological cure at 12 months after initial therapy, serological cure was achieved after retreatment and after an additional 12 months of follow-up, while 80% (28/35) achieved in control group without retreatment.

However, HIV infection may increase the risk for neurological/ocular complications and slower serological titre decline (serofast). CDC STD treatment guidelines 2015 stated (NOT a recommendation for CSF examination as the benefit is unclear) that HIV-positive patients with a CD4 count ≤ 350 cells/ml or rapid plasma regain (RPR) titer $\geq 1:32$ are more likely to have CSF abnormalities consistent with neurosyphilis.

Lastly, the use of doxycycline as pre-exposure prophylaxis (PrEP) and post-exposure prophylaxis (PEP) is not yet recommended though existing limited data is promising for this relatively safe drug.

Learning points:

The same regimen as neurosyphilis should be used for ocular and otic syphilis EVEN IF THE LUMBAR PUNCTURE IS NORMAL. An interval of up to 10-14 days between doses of benzathine penicillin for late latent syphilis or syphilis of unknown duration might be acceptable in a missing dose except in pregnancy women. Enhanced therapy for HIV-infected persons with syphilis does not improve outcomes.

S 0 0 6 – M a n a g e m e n t o f Dermatomyositis (DM)

Speakers: A Femia¹ and RA Vleugels²

¹Ronald O. Perelman Department of Dermatology, NYU School of Medicine; ²Brigham and Women's Hospital; Harvard Medical School, USA

The following points were mentioned:

1. The magnetic resonance imaging (MRI) myositis protocol recommends that MRI should include at least bilateral thighs.
2. In juvenile dermatomyositis (JDM), neck flexors are mostly affected in the earliest stage. One may assess by asking patient to lie supine and to raise the head for a few minutes against resistance applied over the forehead.
3. Debilitating muscle weakness may progress very quickly in JDM. One may consider reducing JDM treatment only when nailfold signs are quiescent.
4. A type 1 interferon (IFN) pathway signature biomarker in blood is highly correlated with Cutaneous Dermatomyositis Disease Area and Severity Index (CDASI) activity scores in DM, and may be a promising surrogate clinical trial end point. The correlation of both a gene signature and CDASI with serum IFN- β suggests that IFN- β drives disease activity in DM.
5. Autoantibodies in DM:
 - i) 15-35% DM cases are positive for antinuclear antibodies and usually in low titre.
 - ii) 5-15% DM cases Anti-Jo 1 positive.
 - iii) Anti-Mi2 is highly specific and is predominantly detected in patients with classic DM with a favourable prognosis.
 - iv) Anti-MDA5 has been described in several Asian DM cohorts, often associated with amyopathic DM and rapidly progressive interstitial lung disease (ILD). Clinically, this subgroup of patients has severe vasculopathy and may also have cutaneous ulcerations, palmar papules, arthritis and hand swelling, diffuse alopecia and oral ulcerations. Pulmonary function tests

are recommended every 1-3 months in this subtype.

- v) Anti-TIF1- γ is highly associated with malignancy in some patient populations. Detection of anti-TIF1- γ antibodies in patients with DM is suggestive of cancer-associated myositis (CAM).
 - vi) Anti-synthetase syndrome commonly presents with mechanic hands and ILD (70-90%)
6. For DM treatment, hydroxychloroquine (HCQ) may be considered for mild skin disease, while methotrexate (MTX) or mycophenolate mofetil (MMF) can be effective for moderate to severe skin disease with HCQ as adjuvant for sun protection. Intravenous immunoglobulin (IVIG) may have improve survival as it avoids the need for systemic immunosuppressive(s). Ruxolitinib (JAK inhibitor) has shown some promising effects in refractory DM.

Learning points:

Myositis-specific autoantibodies are useful dividing DM into distinct clinical phenotypes to guide management and stratify risk of malignancy, lung involvement and rapidly progressive life-threatening disease.

S058 – Pearls: Diagnostic and Therapeutic

Speaker: M Lebwohl

Kimberly and Eric J. Waldman Department of Dermatology, Icahn School of Medicine at Mount Sinai, USA

The following points were mentioned:

1. **"Head off skin cancer with a coffee a day":** a study has found that four cups daily would be most protective against malignant melanoma. Coffee consumption was associated with a lower risk of oral, pharyngeal, and esophageal cancers.
2. **Characteristic T cell receptor beta gene patterns coinciding with particularly aggressive cases of mycosis fungoides (MF):** A team from Dana-Farber Cancer Institute, Brigham and Women's Cancer Center, Harvard Medical School, and Adaptive Biotechnologies has identified characteristic T cell receptor beta gene patterns coinciding with particularly aggressive cases of mycosis fungoides (MF). The researchers used high-throughput T cell receptor beta gene (TCRB) sequencing to assess skin biopsy samples from 208 individuals with cutaneous T cell lymphoma (CTCL), including 177 MF cases. During a 15-year observational study, they found that increased tumour clone frequency (>25%) in the CTCL skin lesion biopsies typically coincided with poorer progression-free survival and overall survival times. Therefore this may be used to identify aggressive early-stage MF/CTCL.
3. **31-gene expression test:** For malignant melanoma, a 31-gene expression test was developed to assess risk of recurrence independent from traditional clinico-pathological factors using tumour biology. This showed consistent results across three archival and three prospective studies totaling over 1,300 unique patients. The 31-gene expression test subclass can predict SLNB positivity risk for patients with T1-T2 tumours and inform SLNB guidance.
4. **Brittle nails response to daily biotin supplementation:** in one study, 63% patients with brittle nails showed clinical improvement

after taking daily biotin supplementation as evidenced by a 25% increase in nail plate thickness. We may rethink biotin therapy for hair, nail and skin disorders. However, caution is required as the US Food and Drug Administration issued a safety warning which stated that Biotin (vitamin B7) may interfere with lab tests at patients who are ingesting high levels of biotin through dietary supplements. This may lead to falsely high or falsely low results, depending on the test. For example, a falsely low result for troponin, a clinically important biomarker to aid in the diagnosis of heart attacks, may lead to a missed diagnosis and potentially serious clinical implications. The FDA has received a report that one patient taking high levels of biotin died following falsely low troponin test results when a troponin test known to have biotin interference was used.

5. A single 200 mg doxycycline within 72 hours of tick removal can prevent Lyme disease. The American Academy of Pediatrics endorsed

short-term (<21 days) use of doxycycline for Lyme disease in children younger than 8 years. This was based on the low risk of dental staining in reports of treatment of a relatively small number of young children with RMSF in which prophylaxis with single-dose doxycycline for a high-risk tick bite or treatment of Lyme meningitis is appropriate. Amoxicillin and cefuroxime axetil are also as effective as doxycycline in treating erythema migrans.

Learning points:

- i) Detection of increasing tumour clone frequency (>25%) in the CTCL skin lesion biopsies by high-throughput TCRB sequencing may be used to identify aggressive early-stage MF/CTCL.
- ii) A single dose of 200 mg doxycycline within 72 hours of tick removal can prevent Lyme disease.