SLE and CNS Toxoplasmosis

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Hospital Melaka
- Malar rash
- Oral ulcers
- Arthritis
- Fever

- Thrombocytopenia
  - ANA 1:10,240
  - Anti Ro 196 U/mL
  - dsDNA negative
  - Low C3, C4

- DX: SLE
- Rx: Prednisolone 50mg OD, HCQ 200mg OD, esomeprazole 40mg OD

24y/Male

First presentation at private hospital
February 2013
Fever
Rash
Headache
Lethargy
Dypsnea

CXR normal
HB 9.5g/dL, WC 4.0
Platlet 197, ESR 34

Rx: IV
Methylprednisolone 250mg OD x3/7

30/4/2013
Private Hospital
- prednisolone 20mg OD
Fitting x1 at Kota Baharu on 26/05/2013
Fever 1/52
Behavioral changes
Headache
Lethargy
AOR Discharge from ED KB

29/05/2013
1st Hospital Melaka Rheumatology clinic Visit
- LUMN CN VII palsy
- Hands tremors
- Power 5/5 all limbs
- Hyperpigmented skin lesions
- RS, CVS, PA NAD
- No arthritis
- T 38.9C

Imp: Active SLE with Cerebral Lupus

Plan
Admit ward
CT brain urgent
IV Methylprednisolone 1g OD x3/7
IV Cyclophosphamide once infection excluded
Investigations

- HB 8.3g/L, WC 2.7, Platlet 131, lymphocytes 0.6
- CRP 0.2 mg/L
- ESR 15 mm/h
- ALT 70 U/L
- HBsAg, anti-HepC virus, HIV Non Reactive

- UFEME Normal
- FBP and HB analysis: beta thalassaemia trait
- Septic workout
- LP- refused
- CT brain
- MRI appointment
Treatment

- IV Ceftriaxone 2g OD
- IV methylprednisolone 1g OD 3/7, later change to oral prednisolone 30mg bd
- T. hydroxychloroquine 200mg OD
- C phenytoin 300mg ON
- Calcium lactate 600mg OD
- Alpha-calcitriol 0.25mcg OD
Progress

- Fitted GTC in ward D4 of admission
- Insisted for AOR discharge-social reason and readmit after 2/7 for IV Cyclophosphomide
Blood C&S: Serratia Marcescens, St to cefuroxime
FBC normalized
No seizure
No fever
Continue antibiotics
Cyclophosphomide deferred to other week

02/06/2013
Readmission for Cyclo
- IV cyclophosphomide 1.2g (NIH protocol)
- 1st cycle
- Prednisolone 30mg BD 2/52 then
- Prednisolone 25mg BD till TCA
- Fitted once at home post cyclo

10/06/2013
Day Care
MRI Brain 1/7/2014

Small infarcts bilateral periventricular white matter region.

Focal lesion on the left thalamus with wall enhancement and perilesional edema suggestive of toxoplasmosis.
Toxoplasmosis??

![Image of a girl with her hands on her cheeks](image-url)
Toxoplasmosis??
Toxoplasmosis??
Further investigations

- Toxoplasma serology
  - Ig G positive
  - Ig M negative
- LP
  - C&S NG
  - Protein 1.71 g/l
  - No cells seen
  - India ink negative
  - TB PCR not detected
  - Toxoplasma rejected

- Anticardiolipin, anti-b2 glycoprotein-1, Lupus anticoagulant antibodies -ve
Treatment

**Induction 3w**
- Fansidar 2 tabs od
- Clindamycin 600mg od
- Folinic acid 10mg od

**Maintenance 6m**
- Fansidar 2 tabs 3x/w
- Dapsone 100mg od
- To continue maintenance as long as patient is on significant immunosuppressants
Progress

2/52

6/52
Back to premorbid personality
No headache/fit
FBC normal
RX
Azathioprine 50mg OD
Prednisolone tapering down to 10mg OD

Clinic follow up
24 July 2013
CRAZY CAT LADY SYNDROME
TOXOPLASMOSIS
Toxoplasmosis
Toxoplasmosis

- parasitic disease caused by the protozoan Toxoplasma gondii
- T. gondii infects a large proportion of the world's population (perhaps one third) but uncommonly causes clinically significant disease
- Acute toxoplasmosis is asymptomatic in 80-90% of healthy hosts
Acute toxoplasmosis in hosts who do not have AIDS but are immunodeficient

- CNS toxoplasmosis occurs in 50% of patients
- Ocular toxoplasmosis
- Signs and symptoms similar to those observed in immunocompetent hosts: flulike symptoms and lymphadenopathy
- Myocarditis
- Toxoplasmic pneumonitis - Typical symptoms of a pulmonary infection, mirroring in particular *P. carinii* jiroveci, including nonproductive cough, dyspnea, chest discomfort, and fever
CNS TOXOPLASMOSIS

3 major pathologic pattern

- Diffuse encephalopathy with or without seizure
- Single or large progressive mass lesion
- Meningoencephalitis

Procedures for diagnosis

- Lumbar puncture
- Brain biopsy
- Lymph node biopsy
- Amniocentesis - Perform amniocentesis at 20-24 weeks' gestation if congenital disease is suggested
- Bronchoalveolar lavage
Immunology

- Anti-Toxoplasma immunoglobulin G (IgG) titers present a 4-fold increase that peak 6-8 weeks following infection and then decline over the next 2 years, although they remain detectable for life.

- Anti-Toxoplasma IgM appears in the first week of the infection and then declines in the next few months.

Association of antibodies to T. Gondii with SLE

The toxoplasma serological status of 50 patients with SLE was compared with that of 50 healthy controls; high titres of toxoplasma antibody were significantly more common in the patients with SLE. These titres did not correlate with any of the routinely measured indices in SLE nor with the patients' prior treatment.

MRI has superior sensitivity to CT scanning, and often demonstrate a single or multiple lesion(s) or more extensive disease not apparent on CT scans.

One study showed that MRI detected abnormalities in 40% of patients whose abnormalities were not detected on CT.

Imaging

Joseph et al reported that 35% of computed tomography (CT) brain scans were abnormal and 65% of magnetic resonance (MR) scans, but CT scanning remains valuable in identifying hemorrhages and larger infarcts in patients with systemic lupus erythematosus.
Cerebral toxoplasmosis in SLE
Case reports

- There have been many reports of toxoplasmosis in SLE patients, mimicking SLE manifestations, and they emphasized the diagnostic problems and recommended serologic analysis for toxoplasmosis before initiation of and during treatment with corticosteroids (2-5).
- Zamir et al. diagnosed toxoplasmosis infection from a post mortem finding of a patient mimicking lupus cerebritis. CT brain was normal.
- Feinglass et al. detected CSF abnormalities consistent with toxoplasmosis infection in 32% of 37 patients with NPSLE.

Case reports

- Seta et al reported a case of toxoplasmosis in SLE patient who was in low disease activity, with high CD4 ratio
- Relationship with HIV patients on HAART with Immune Reconstruction Inflammatory Syndrome (IRIS)

Normalization of immunity in patients who have inactive SLE and are receiving relatively low doses of steroids and/or immunosuppressants may contribute to the manifestation of opportunistic infections, as the immune system of SLE patients may originally show hyper-responsiveness to non-self as well as self-antigens.

Role of prophylaxis?

- Opportunistic infections – rare, underreported
- Lack of literature
- No guidelines exist
- Implementing guidelines from preventing OI in HIV or bone marrow transplanted patients
Perspectives on prevention of OI in SLE patients

- Yearly influenza shot
- Pneumococcal vaccination
- Regular pap smears
- TB skin test prior to immunosuppressive
- HBAg, HCV, HIV serology baseline
- Strongyloides screening in endemic areas

Back to case.....
SLE with CNS toxoplasmosis mimicking NPSLE

**SLE**
- Pancytopenia
- ANA
- Hypocomplementemia
- Mucocutaneous

**CNS Toxoplasmosis**
- Imaging
- Immunology
- Responded to toxoplasmosis treatment
Conclusion

- Cerebral lupus is a diagnostic challenge.
- Essential TRO CNS infections prior to administration of immunosuppressant.
- Toxoplasmosis presentations are nonspecific and may be considered if NPSLE symptoms do not abate with standard immunosuppressive therapy.
Conclusions

- Further study is warranted before routinely recommending prophylaxis for all SLE patients on steroid therapy.
- In patients receiving combination steroid and cytotoxic therapies such as cyclophosphamide, prophylaxis with trimethoprim-sulfamethoxazole should be considered.
thank you