Government of **Western Australia**
North Metropolitan Health Service
Women and Newborn Health Service

Congenital Toxoplasmosis in Pregnancy
Preparing for the neonatal outcome

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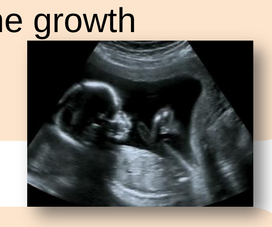
Background

Congenital *toxoplasmosis* (CT) is a parasitic disease caused by *Toxoplasma gondii*. Infection is often subclinical, although can cause significant fetal and neonatal harm including severe neurological and ocular damage. Prompt diagnosis and rapid initiation of treatment are critical for the best outcomes in infants. This case describes the role of pharmacy in preparation for a potential CT diagnosis

Case Presentation and Progress | **Gestation** | **Clinical Management**

Patient History
Patient JO, G_1P_0 with past medical history of ankylosing spondylitis and mild asthma. JO has a history of smoking cannabis in pregnancy. Nil regular medications taken by JO. Allergies included a rash to amoxicillin and cefalexin.

Clinical Presentation
Patient JO presented to the Fetal Assessment Unit for a 28-week obstetric ultrasound which indicated severe intrauterine growth restriction (below the 3rd percentile).



Neonatal Exposure
Amniocentesis was performed under continuous ultrasound guidance.
Clear amniotic fluid was aspirated and microbiological and chromosomal microarray were evaluated.
The amniotic fluid returned a negative result for *toxoplasmosis*.
Due to possible 2nd trimester seroconversion, risk to infant was deemed at 25-50%

Maternal Pharmacotherapy
Patient JO was commenced and counselled on pharmacotherapy for *Toxoplasma gondii* 5 days after her amniocentesis:
- Pyrimethamine 50mg daily
- Sulfadiazine 1g every 6 hours
- Calcium folinate 15mg daily (to combat risk of bone marrow suppression from pyrimethamine)

Neonatal Review at Birth
At birth, Baby JO received an ophthalmology review, cranial ultrasound and serological testing along with standard screening. If congenital toxoplasmosis was confirmed, pharmacotherapy would need to be initiated within 7 days of life and continued for 12 months.

No signs of congenital *toxoplasmosis* infection were present.

Neonatal Follow-Up
Baby JO required repeat serological testing for 1st year of life. Tests will be conducted at 2 weeks of age, 1 month then every 2 months.

Testing for Newborn Infant

Serum
- ☑ IgG (Dye Test)[a]
- ☑ IgM ISAGA[a]
- ☑ IgA ELISA[a]

Buffy Coat
- ☑ PCR[a]
- ☑ Isolation[a]

Testing for Newborn Infant

CSF
- ☑ IgG[a], IgM ELISA[a]
- ☑ PCR[a]

Placenta
- ☑ PCR[a]
- ☑ Isolation[a]

Follow-Up of Infant for Antibody Load

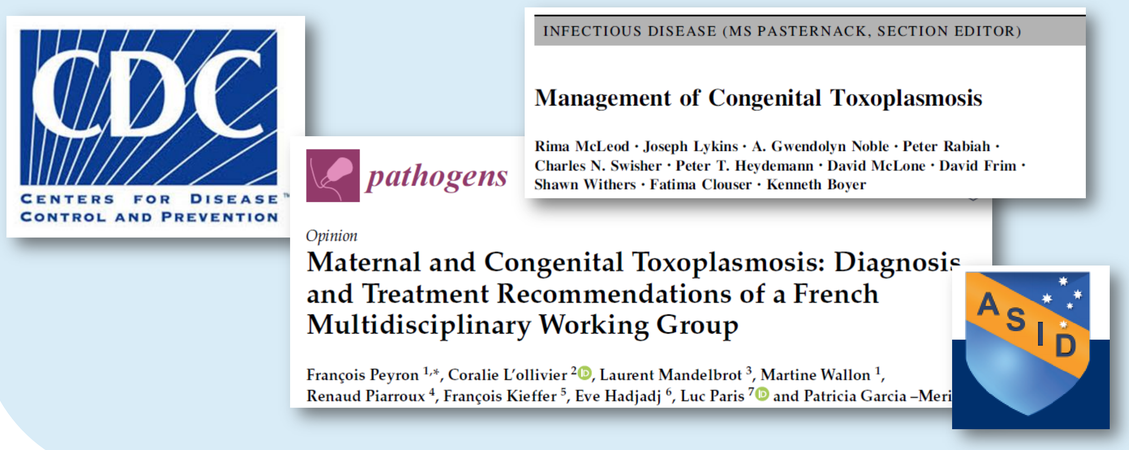
Serum
- ☑ IgG (Dye Test)[a] two-fold, parallel with last sample

10 — 28 — 31 — 34 — 36

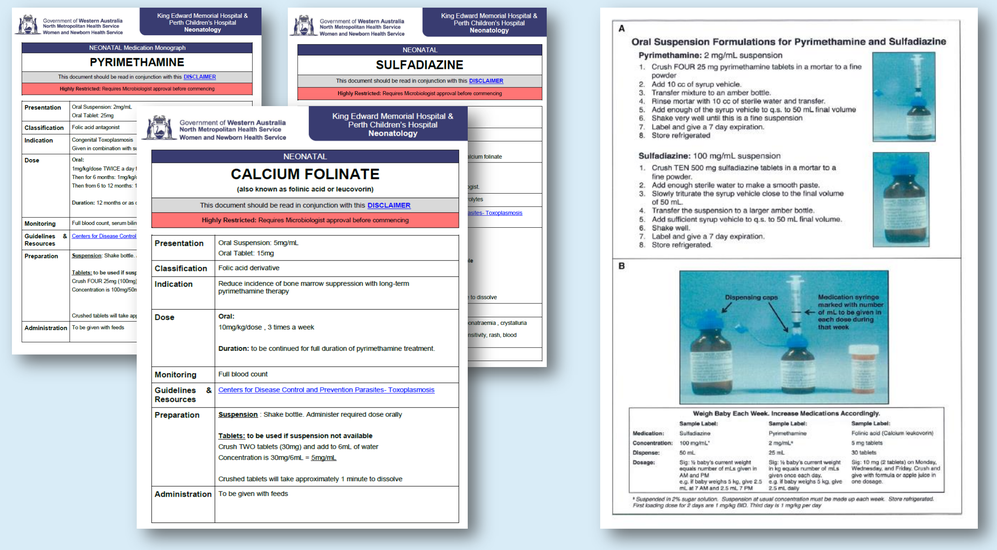
First Trimester Screening
Routine First Trimester screening undertaken, did not show any abnormal results at this time. JO returned negative serology result for *toxoplasma* immunoglobulins, IgM and IgG.

Toxoplasma Seroconversion
TORCH screen conducted and returned a positive result for *toxoplasma* IgM and IgG.
Positive results indicated seroconversion in pregnancy occurred during the second trimester.
Due to a moderate risk of possible neonatal infection JO was educated regarding the neonatal risk and opted to initiate pharmacotherapy.

Maternal Medication Protocol Development
Prior to 17 weeks gestation, spiramycin is used to prevent infection early in fetal development.
Post 17 weeks, treatment using pyrimethamine and sulfadiazine with calcium folinate is recommended.
Collaboration with pharmacy, microbiology, maternal-fetal medicine, neonatology, and international experts in toxoplasmosis resulted in optimal case review and formulation of patient and hospital specific guidelines.



Neonatal Medication Protocol Development
Pharmacy liaison with neonatal infectious disease physicians was highlighted as a key aspect in managing medication delivery.
Review of published literature and case reports identified a model of care for the neonate and neonatal monographs for each medication were created.
Pharmacological properties of each medication were assessed to ensure oral solutions could be prepared for optimum medication delivery.



Conclusion

In anticipation of a CT diagnosis, a collaborative and evidence-based approach to preparing medication protocols and formulations is essential to ensure optimal and timely management of a rare congenital condition.