Regional Public Health
Better Health For The Greater Wellington Region

Communicable Disease Bulletin

Circular letter to: General Practitioners and Practice Nurses

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Neonatal Chlamydia Conjunctivitis

In the past few months Regional Public Health (RPH) has been alerted by local general practitioners to the fact that a number of babies under four weeks of age in our region have been diagnosed with chlamydia conjunctivitis.This infection affecting newborn babies is preventable. This article is to encourage all general practitioners to consider this diagnosis, and to remind lead maternity caregivers that there are guidelines around the testing, diagnosis and treatment of chlamydia in pregnant women which, if followed, will prevent infection in babies – both conjunctivitis and pneumonia.

Regional and national statistics:

Local laboratories for the region report that in the years 2009 /2010 a total of 25 Chlamydia positive eye swabs in babies under age one year were diagnosed. We think that this is likely to be an underestimate of the total number of cases in the community.

Nationally, ESR collects data from 16 DHB laboratory areas and includes this data in their annual sexually transmitted infection surveillance reports. Over the past four years the number of positive chlamydia swabs in the under one age group has been between 131 and 151 per year. This is not nationally complete data but gives us some idea of the problem across the country.

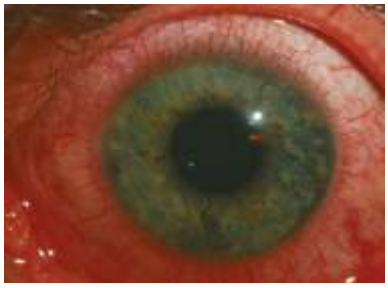
Table: Chlamydia positive swabs in the under one year age group

ESR Annual Report	Positive swabs in under one year age group
2006	131
2007	151
2008	143
2009	140

The prevalence of Chlamydia in pregnant women under the age of 25 years in the Wellington region was reported as 12% in a 2004 study published in the NZMJ,[2]

Chlamydia conjunctivitis overview

Chlamydial conjunctivitis presents with a range of symptoms, from mild eyelid swelling with a watery or mucopurulent eye discharge to severe eyelid swelling with chemosis (thickening and redness of the conjunctivae). A pseudomembrane of exudate adherent to the conjunctiva may be present. Conjunctivae may be very friable with a blood stained eye discharge. This has been found to be highly specific for chlamydial infection[15]. Untreated infection can last for months with possible scarring and long term consequences. Treated infection usually resolves well [9,10].



Swabs should be taken when assessing conjunctivitis in infants less than one month of age (ophthalmia neonatorum), or when the mother has a history of untreated *C. trachomatis* infection or inadequate antenatal care[8,9,10]. If there is any suspicion of *Neisseria gonorrhoea* infection then appropriate swabs should also be taken. Swabs should also be considered in older babies when conjunctivitis is not responding to the usual management. Untreated chlamydia conjunctivitis typically follows a chronic improving and relapsing course.

Aotea Pathology recommends using the usual chlamydia cervical swab to take an eye swab from neonates or older babies. Note that the media used to transport the chlamydia is a caustic solution and so the swab **must not be dipped in the media prior to taking the sample**. If *N. gonorrhoea* is suspected then a separate swab must be taken using the usual bacterial swabs supplied to medical practices.

If chlamydial conjunctivitis is suspected or confirmed in a neonate then discussion with, and probably referral to, ophthalmology, paediatrics or the neonatal service urgently is the appropriate management. Patient.co.uk (www.patient.co.uk/showdoc/40025320/) summarises the wide referral indications for neonates with a sticky eye discharge which would also be appropriate in a New Zealand setting:

- If the conjunctiva is red, especially if the bulbar conjunctiva (overlying the sclera) is red.
- If the onset is sudden and severe.
- If the baby is distressed or unwell.
- If both eyes are affected.
- f there are suspicions of a possible maternal infection.
- If the mother or you are concerned.

Neonatal Chlamydia Conjunctivitis continued...

Treatment of chlamydia conjunctivitis will be with oral antibiotics (usually erythromycin for 14 days14) as topical therapies are not effective. Note that erythromycin used in neonates has been associated with potential complications (pyloric stenosis) and this would need to be discussed with parents before starting treatment.

For older babies with confirmed chlamydia conjunctivitis it is appropriate to consult with paediatrics. Treatment with oral antibiotics by primary care may be advised or the baby may need a paediatric assessment depending on the specific circumstances.

Follow up must include treatment for the mother and appropriate contact tracing.

Prevention has been found to be best achieved by **identifying and treating women before the birth of their baby**.

Chlamydia facts:

- *Chlamydia trachomatis* infection is the commonest bacterial sexually transmitted infection (STI) in New Zealand.
- 80% of women and 50% of males are asymptomatic.
- It can cause conjunctivitis and pneumonia in babies (vertical transmission rate of 20-50%).
- The incubation time can be up to 3 or 4 weeks before signs and symptoms appear in babies.
- It is easy to test for.
- The test is very accurate (Nucleic acid amplification testing NAAT).
- The treatment for adults is simple, one dose of antibiotic (Azithromycin 1g orally stat dose) which is safe in pregnancy.
- The treatment is available on Medical Practitioner's Supply Order (MPSO).
- Contact tracing/partner notification should be carried out to prevent the woman becoming re-infected (GP, Sexual Health Clinic, FPA, youth clinics can be recommended to male partners- those under 25 years old will usually be seen for free).
- The College of Midwives guidelines on sexually transmitted infection testing in pregnancy emphasises the responsibility of midwives to provide up to date, best evidence practice in giving information and providing access to testing for and treatment of STIs in pregnancy. These guidelines fit well with those of other relevant professional bodies (RANZCOG, RNZCGP, NZ Sexual Health Society) and the Ministry of Health which recommend that: *Pregnant women under the age of 25 years should be offered a test for chlamydia in the first trimester and this offer should be repeated in the third trimester for women at higher risk.*
- It is well recognised that chlamydia infection can affect women, men and babies. It can cause cervicitis, pelvic inflammatory disease leading to tubal disease and infertility and ectopic pregnancy in women, urethritis, epididymo-orchitis and arthritis in men, and conjunctivitis and pneumonia in babies. The transmission rate from infected mothers to babies has been variously reported as between 20-50%. The vast majority of women with chlamydia have no symptoms and so opportunistic testing is recommended.

The Ministry of Health guidelines advise the following:

Chlamydia testing should be offered to all sexually active females under 25 years of age if they have never been tested. The offer of testing should be repeated annually to all sexually active females under 25 years of age if they have:

- Had two or more partners in the last 12 months, or
- Had a recent partner change.
- An inconsistent use of condoms

Chlamydia testing should be offered to all sexually active males under 25 years of age if they have:

- Had two or more partners in the last 12 months, or
- Had a recent partner change.
- An inconsistent use of condoms

Testing should be **routinely** given to:

- Those with symptoms suggestive of chlamydia infection.
- Sexual partners of those with suspected or confirmed chlamydia infection.
- Patients requesting a sexual health check.
- Patients with another sexually transmitted infection.
- **Pregnant women (test in first trimester and repeat in third trimester if there are ongoing risk factors).**
- Women undergoing a termination of pregnancy.
- Mothers of infants with chlamydial conjunctivitis or pneumonitis.
- Pre-menopausal women undergoing uterine instrumentation.

The Test

Nucleic Acid Amplification testing is the test used in all laboratories in the region. This test is 99.9% specific and between 80 – 96% sensitive depending on which site is sampled.

Treatment for pregnant or breastfeeding women:

- Azithromycin 1g orally stat (Also the recommended first line treatment in pregnancy in the UK).

OR

- Amoxycillin 500mg three times daily orally for seven days.

Other options:

- Erythromycin ethyl succinate (EES) 800mg four times daily orally for seven days.
- Erythromycin base 250mg four times daily orally for 14 days.
- EES 400mg four times daily orally for 14 days.

Note: Roxithromycin is not suitable for treatment.

Test of cure (TOC)

Recommended treatment is >95% effective. However, if there is time left in the pregnancy, a test of cure can be done 4 weeks after treatment has been completed. If a TOC is done sooner it may be an inaccurate result because the test is so sensitive.

Contact tracing / partner notification

This should be carried out to prevent the woman becoming re-infected. Refer the partner to their general practitioner, sexual health clinic, FPA, or youth clinics.

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Could it be TB?
Early diagnosis is critical for the patient and the population

The Guidelines for Tuberculosis Control in New Zealand 2010 are now available on the Ministry of Health website www.moh.govt.nz/cd/tbcontrol . These update and replace the 2003 guidelines.

The guidelines are a resource for all health care providers in New Zealand who may be involved in the diagnosis or management of tuberculosis (TB). Sections of particular relevance to general practitioners are Chapter 2 (clinical features, investigation and assessment of active TB disease), and Chapter 10 (TB control in people from countries with a high incidence of TB).

300 to 400 cases of TB are notified in New Zealand every year. Rates have dropped over the past two years, but it is too early to tell whether this is a sustainable trend. Rates have not gone down in Auckland, the region with the highest number of cases. The 2009 rate of around 7 cases per 100,000 per year puts us in the same range as other developed countries although higher than Australia and North America. **Between 2002-2007 67% of TB was pulmonary, 28% extra-pulmonary and remaining 5% was both pulmonary and extra-pulmonary**.

Some GPs will never see a case of TB. Others who see many refugees and migrants, or in areas of high deprivation, may diagnose a few cases per year. As with other curable diseases, the earlier it is detected the better the outcome. This applies to the health of the individual patient and also to the health of the community that he or she comes from. Delayed diagnosis of an infectious patient can result in many other people becoming infected, including young children who are most of risk of life-threatening disseminated illness.

So what are the flags that should raise suspicion that a patient has TB? The classic symptoms of pulmonary TB include: cough, fever, unexplained weight loss, night sweats and fatigue. While these can occur with other chest infections, TB should be considered if a cough has not resolved after three weeks. Non-pulmonary TB can be much trickier to diagnose. The disease can occur almost anywhere in the body, but most common sites are the lymph nodes, pleura, peritoneum, bones and meninges. **Non-pulmonary TB is not infectious to others**.

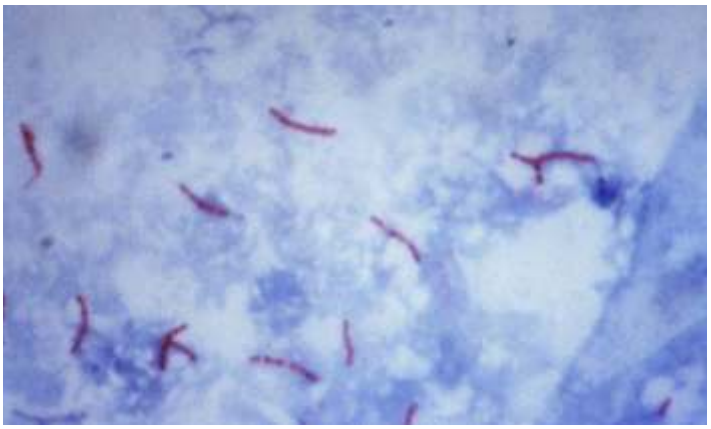
Other pointers to TB relate to the patient's characteristics. In New Zealand, rates of TB are highest in people who are originally from high incidence countries. **People are more likely to develop TB within their first five years of arrival, particularly the first two years**. Countries with a particularly high incidence include: Afghanistan, India, China, Cambodia, Vietnam, Philippines, Kiribati, and many African countries. Maori and Pacific people have a higher rate of TB than Pakeha New Zealanders.

People with underlying immunosuppression have a far greater risk of developing TB, as do those who report past contact with an infectious case of tuberculosis.

Anyone can get TB, not just those in the high risk groups. Initial exposure to m. tuberculosis or m.bovis is often unknown and may have occurred many years ago, at a time or in a place where TB was more prevalent.

When public health services are notified of a case of TB a process of contact tracing and follow up begins as was illustrated in the October 2010 Communicable Disease Bulletin. Public health nurses liaise with the treating clinicians to develop a partnership with the patient. This approach is essential to ensure that treatment is completed with minimal missed doses of medication. Completion of treatment is an essential factor in TB control. **Failure to achieve it can lead to relapse, multi-drug drug resistance, and spread of the disease to others**.

The level of supervision used varies between monthly contact with a self-medicating patient, to daily Directly Observed Therapy (DOT). This will depend on characteristics of the patient, the



predicted infectivity and the overall public health risk of their illness (See Chapter 4).

The rapport between patient and the public health nurse is also important to ensure that contact tracing is thorough. Public health services follow up those who have been in close contact with the patient, to provide screening and assessment. Contacts found to have latent tuberculosis infection (LTBI) are offered treatment, which is supervised by a clinician in the public health service or by a hospital specialist. Any contacts found to have TB disease - the term used for active tuberculosis - are referred and notified, and if infectious, another round of contact tracing commences (See Chapter 7).

There have been several developments in the management and control of TB since the last guidelines were published. One of the most significant is the development and increasing use of Interferon-Gamma Release Assay (IGRA) as a screening test for latent TB infection (LTBI). One such assay is the QuantiFERON-TB Gold test.

As this is a venous blood test it can be ordered more readily by clinicians than the Mantoux test, but it is important that it is ordered appropriately. It is not a diagnostic test for TB disease, although it can offer additional information alongside more definitive microbiological and radiological tests. It is not yet recommended (or subsidised) for use in primary care.

Currently it is mainly being used in public health, occupational health and some secondary care settings (for example renal units and rheumatology services), where patients who have LTBI are at high risk of developing TB disease. **Tests should only be done if there is an intention and a capacity to offer the patient treatment for LTBI**. This requires good information about how to interpret a positive test, the benefits and risks to the patient of treatment for LTBI and a management plan including close monitoring for side-effects of treatment, particularly hepatotoxicity. The guidelines provide advice on these matters (Chapter 8).

There is no room for complacency in tuberculosis control. TB is a critical global health issue. Internationally, multi-drug resistant TB (MDR-TB) is a growing concern, and the number of MDR-TB cases detected in New Zealand has recently increased and is expected to increase in future.

Primary care has a critical role in early detection, initial investigation and referral of patients who have symptoms which may be caused by tuberculosis.

Reported by Dr Margot McLean, Medical Officer of Health, Wellington Regional Public Health and Chair, Tuberculosis Advisory Group.

Pretty Infection
How not to catch paratyphoid fever from your aquarium

In June 2010 Regional Public Health investigated a case of salmonella infection in a young woman.

Initially an environmental health officer from the local authority commenced the case investigation as is routine for standard positive salmonella results. When the subtyping came back as *Salmonella Paratyphi B var. Java*, Regional Public Health took over further investigation. *Salmonella paratyphi* infection carries more risk of serious infection and spread than the more common *Salmonella typhimurium* which usually causes typical gastroenteritis (salmonellosis). These are both distinct from *Salmonella typhi* which is responsible for typhoid fever.

The 26 year old student and retail worker had developed diarrhoea, fever, headaches, loss of appetite and cramping abdominal pain in late May. She was off work for more than a week and the symptoms resolved without specific treatment.

She subsequently had three 'test of clearance' faecal specimens taken one month later, all of which were still positive. Consideration was given to antibiotic treatment but as she was by then completely asymptomatic it was decided no treatment was required. A further month later she returned three clear stool specimens.

She had had no overseas travel and no significant contact with any overseas travellers. However, she had been handling water and weeds from a home tropical fish aquarium and specifically recalled not washing her hands afterwards.

The aquarium water was tested and contained an identical isolate of *Salmonella paratyphi*.

Interestingly the woman's partner who had mouth siphoned the water from the fish tank once or twice a month did not become unwell, though this type of activity has been identified as causing *Salmonella paratyphi* infections from aquaria in NZ in the past.

There have been 17 cases of paratyphoid fever notified in the Wellington, Wairarapa and Hutt region in the last 5 years. Nationally there have been 116 cases notified in 5 years. These were mainly (87%) in people of European and Asian origin, were approximately evenly spread between males and females and were predominantly in people over the age of 20. Fish and turtle aquaria are a potential source of *Salmonella paratyphoid* infection. The New Zealand Public Health Surveillance Report of Sept. 2005 identified 14 cases over a 16 month period where contact with a turtle or tropical fish tank had been identified as the likely cause of a *Salmonella paratyphi B var. Java* infection. Fish excrete the salmonella bacteria without themselves becoming sick so there is likely to be no outward appearance of any infection risk. **Handwashing after handling aquaria and their residents, and avoiding mouth siphoning of the water is recommended**.

In the case described above an information letter was sent to the pet shop along with health information to be given to all purchasers of tropical fish. Previously, similar information has been sent widely to tropical fish retailers in the region.

Salmonella Paratyphi

Salmonella paratyphi infection severity depends on factors including strain virulence, the amount ingested, time until onset of treatment, previous vaccination and age. The more severe forms present a similar clinical picture to typhoid fever. Sustained fever, headache, malaise, anorexia, abdominal pain and constipation are typical features. Other symptoms may include bradycardia, splenomegally, non productive cough and rose coloured spots on the trunk. Diarrhoea may be present. Mild infection may be completely unapparent.

Severe infection may involve intestinal ulceration, perforation or haemorrhage, and altered mental states. Prior to the introduction of antibiotics the case fatality rate for typhoid fever was thought to be 10 to 20% with an evolving febrile illness lasting about four weeks. With appropriate treatment the fatality rate is less than 1%. Relapses are possible after antibiotic treatment is completed.

Spread is by ingestion of food or water contaminated by faeces or urine of symptomatic individuals or carriers. Incubation for paratyphoid fever is usually one to ten days.

The particular variant of paratyphoid fever in the 26 year old woman described above more commonly causes typical gastroenteritis than severe disease.

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Tuberculosis Tracing Requires Patience and Persistence