

# QML PATHOLOGY

newsletter December 09

## >>Genitourinary Chlamydia Infection

Dr Paul Bartley FRCPA FRACP PhD

Consultant Microbiologist and Infectious Diseases Physician

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### Organism

- Chlamydiae are small Gram-negative obligate intracellular bacteria (or at least are classified as such, they are difficult to stain, but are more closely related to Gram-negative bacteria). They preferentially infect squamocolumnar epithelial cells.
- Chlamydia trachomatis* is one of the four Chlamydia species pathogenic for humans and may cause genitourinary (Serovars D-K) or corneal (Serovars A, B, Ba and C) infection. Lymphogranuloma venereum is a more virulent genital cutaneous and mucosal *C. trachomatis* infection associated with painful lymphadenitis due to infection by Serovars L1-L3.
- The organism lacks a peptidoglycan cell wall and acquires host-cell derived nucleotides and ATP for its own metabolism.
- The infectious particle is the metabolically inactive elementary body, which is phagocytosed by the host cell. Transformation to the replicating form (known as a reticulate body) takes place within the phagosome. The reticulate body then transforms back to an elementary body to infect neighbouring cells.

### Genital Infection

- Chlamydia notifications have been increasing consistently – nationwide since the mid 1990s (see Figure 1).
- Many patients with genital Chlamydia infection are asymptomatic.
- Chlamydia infection should not be considered 'in isolation' within any patient. All patients with one proven sexually transmitted infection (STI) should be thoroughly tested for other STIs.
- At QML Pathology, the majority of positive specimens are from women aged 15-25 and men aged 20-30 (See Figure 2).
- Clinical manifestations are a consequence of mucosal infection and the inflammatory response:
  - Males – urethritis and rarely epididymo-orchitis or prostatitis
  - Females – cervicitis, vaginitis, urethritis and salpingitis (also referred to as Pelvic Inflammatory Disease (PID)).
- One episode of clinically apparent PID dramatically increases the risk of both tubal infertility and ectopic pregnancy.
- As is recognised with other sexually transmitted mucosal infections, Chlamydia infection may facilitate transmission of HIV.
- Intrapartum infection may cause conjunctivitis or pneumonia in the infant.
- Despite a plethora of publications, the following questions remain unanswered:
  - What is the risk of subfertility after one episode of chlamydial cervicitis?
  - What is the risk of ectopic pregnancy after one episode of chlamydial cervicitis?
  - How frequently does silent salpingitis co-exist with proven lower genital tract infection?

Figure 1: Chlamydia Notifications (Australia) 2002 - 2007

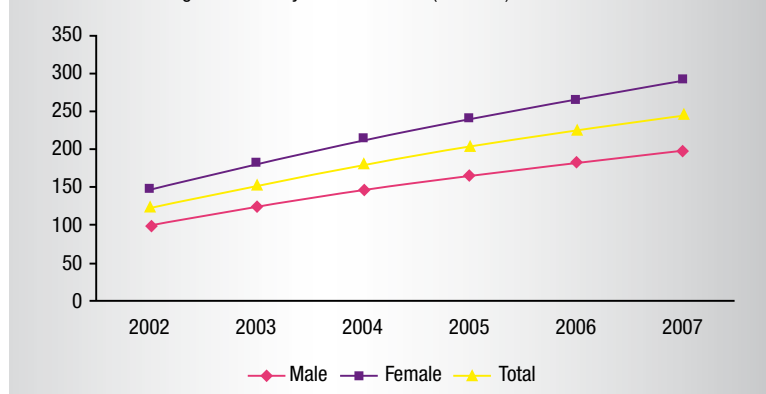
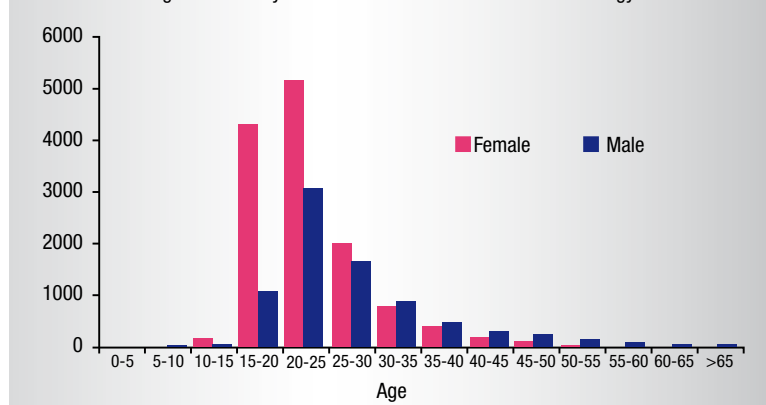


Figure 2: Chlamydia Notifications 2005 - 2007 QML Pathology



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### Diagnosis

- Tissue culture and direct antigen detection methods are obsolete in Western nations.
- Nucleic acid detection by either PCR or TMA methods offers superior analytical and diagnostic sensitivity and specificity.
- QML Pathology uses the AC2 APTIMA assay from GenProbe to detect *C. trachomatis* in urine and genital swab specimens and is able to test extragenital specimens including throat, conjunctival and rectal swabs as indicated.

### Treatment

- Recommended treatment is as follows:
  - Azithromycin 1g orally as a single dose

Or

- Doxycycline 100mg BD orally for 7 days.

In pregnancy:

- Erythromycin (Base) 500mg orally QID for 7 days
- Amoxycillin 500mg orally QID for 7 days.

- The role of PCR testing as a 'test-of-cure' is controversial and is yet to be completely evaluated. It is not known when nucleic acid debris from non-viable organism is cleared.
- Therefore, 'test-of-cure' is NOT recommended.
- Repeat testing is advisable if genital symptoms persist or recur, as reinfection is possible.
- All patients with Chlamydia infection should have their sexual partner(s) tested and treated as necessary.



**Dr Paul Bartley**  
FRCPA FRACP PhD

Consultant Microbiologist and  
Infectious Diseases Physician  
Microbiology & Immunology Dept  
Ph: (07) 3121 4325  
Email: Paul.Bartley@qml.com.au

Dr Paul Bartley graduated with a Bachelor of Medical Science before completing his medical degree with first class honours in 1992 at the University of Queensland. Dr Bartley trained as a Physician at the Royal Brisbane Hospital, obtaining

his fellowship with the College of Physicians in the area of Infectious Disease in 1999. Post training he joined the Royal College of Pathologists of Australasia and began further education in Microbiology at the Princess Alexandra Hospital and QML Pathology. Dr Bartley completed his fellowship with the College in 2005.

In addition to this, he was awarded the Gus Nossal NHMRC Medical Post Graduate Scholarship in 2001 to fund his PhD at Queensland Institute of Medical Research in Molecular Parasitology. His PhD was awarded in 2005. Dr Bartley practices in all areas of clinical infectious disease and is a Consultant Microbiologist at QML Pathology, commencing with the organisation in 2003.

## Infectious Diseases Report - Geographic Distribution - October 2009

ORGANISM	Regions (as per key below)															Total			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Oct	Sep	Aug	Jul
Adenovirus (not typed)		2					4		4	1	4	4				19	25	40	63
Adenovirus (typing pending)	1	2	1				1		1	3	1	1			1	12	13	16	32
Barmah Forest virus	1	1					2		2	2		2		2	3	15	7	18	12
Bordetella pertussis	6	29	11	4	3	1	18		24	5	46	32	6	13	3	201	147	145	186
Brucella species	1									1						2	0	0	2
Campylobacter jejuni																0	0	0	0
Chlamydia pneumoniae																0	0	0	0
Chlamydia trachomatis, not typed	64	83	27	32	2		91		49	19	145	41	20	22	19	614	560	595	609
Coxiella burnetii	1						1			1	1					4	6	8	5
Cryptococcus species			1								1					2	3	4	2
Cytomegalovirus (CMV)	3	2	3	1	1		10		5	1	12	5	3	2	1	49	55	39	55
Entamoeba histolytica																0	0	2	1
Enterovirus - not typed														1		1	5	1	4
Epstein-Barr virus (EBV)	3	22	8	4	2		35		21	8	37	20	5	9	5	179	159	121	130
Flavivirus unspecified		1					2		2			1	3	1		10	8	7	16
Hepatitis A virus		3									3					6	6	1	3
Hepatitis B virus	5	3	8				11		1		59		3		1	91	87	96	74
Hepatitis C virus	19	35	22	6			36		25	6	75	27	6	10	11	278	285	269	300
Hepatitis D virus																0	0	0	0
Hepatitis E virus																0	1	0	0
Herpes simplex Type 1	11	43	10	10	1		43		40	8	58	27	9	5	6	271	229	246	294
Herpes simplex Type 2	12	35	7	8	1		24		17	2	52	15	3	6	3	185	153	156	175
Herpes simplex virus - not typed																0	0	0	0
HIV-1	5	1					2				4			1		13	2	6	5
HTLV-1															1	1	0	0	0
Influenza A virus	1	2	1			1	3		3	1	5	2			3	22	25	186	1326
Influenza B virus		1		1			2		3		3	1				11	21	23	36
Legionella pneumophila (all serogroups)																0	0	0	1
Legionella species	1												1			2	1	2	3
Leptospira species				1												1	3	4	8
Measles virus																0	1	1	0
Mumps virus																0	2	1	2
Mycoplasma pneumoniae	1	2	5	2			4		3	1	7	5				30	51	44	59
Neisseria gonorrhoeae	6		2	3			11		3	2	5	4				36	37	31	28
Parainfluenza virus Type 1									1	1		1				3	2	0	4
Parainfluenza virus Type 2																0	0	6	5
Parainfluenza virus Type 3		5	1				3		6		4	4	3	3		29	24	17	20
Parvovirus		3					6		2		2	1	7			21	14	15	18
Pneumocystis carinii																0	1	0	0
Respiratory Syncytial virus		3	1				2		3	1	3	3			2	18	39	44	155
Rickettsia - Spotted Fever Group	1											1				2	5	3	6
Ross River virus	3	7	3				12		10	3	5	2	6	6	7	64	49	49	63
Rubella virus									1		1					2	0	1	0
Salmonella paratyphi A																0	0	0	0
Salmonella paratyphi B																0	0	0	0
Salmonella typhi																0	0	0	0
Shigella dysenteriae																0	0	0	0
Shigella flexneri																0	0	0	0
Streptococcus Group A	8	11		1			11		16	4	13	6	3	1	4	78	66	57	73
Toxoplasma gondii																0	0	0	1
Triconema pallidum	20	8	7	3	3		26		8	5	25	2	2	21	1	131	129	122	102
Trichomonas vaginalis	4	1					3	1			1			3		13	15	19	14
Varicella Zoster virus	5	35	13	3	2		27	1	18	8	42	17	4	8	3	186	187	154	178
Yersinia enterocolitica																0	0	1	0
TOTAL	182	340	131	79	15	2	390	2	268	83	614	224	84	114	74	2602	2423	2550	4070

### REGIONS

1 Cairns  
2 Gold Coast/Northern Rivers  
3 Ipswich

4 Mackay  
5 Mount Isa  
6 New England  
7 North Brisbane Suburbs

8 Northern Territory  
9 Redcliffe  
10 Rockhampton  
11 South Brisbane Suburbs

12 Sunshine Coast  
13 Toowoomba  
14 Townsville  
15 Wide Bay/Burnett

September 2009 and further historical clinical data can be obtained by contacting your local Medical Liaison Officer



The Pathologists and staff at  
QML Pathology would like to wish  
you health, happiness and prosperity  
throughout the festive season.



## >> Cervex-Brush Combi®

A new collection device that combines the important features of the Cervex Brush® with the benefits of the endocervical brush is now available at QML Pathology. The Rovers Cervex-Brush® Combi provides Pap smear collectors with the convenience of a simultaneous Pap smear collection with a single device insertion.

An important advantage of the Cervex-Brush Combi® is its ease of use, requiring only two rotations as opposed to five required by the Cervex Brush®. Laboratory tests have indicated the Cervex-Brush Combi® delivers a higher yield of endocervical cells and an increased viral load in the collected cellular sample. The device is ideal for the collection of liquid based samples and concurrent HPV DNA testing and PCR tests for chlamydia and gonorrhoea.

For further information or to obtain samples, please contact the QML Pathology Liaison Department on (07) 3121 4943, your local QML Pathology Liaison Officer or the QML Pathology Cytology Department on (07) 3121 4009.



## >> BD SurePath™ Liquid Based Cytology System

QML Pathology is pleased to announce an alternative liquid based Pap test to be introduced in 2010. The BD SurePath™ Liquid Based Cytology System features a more convenient specimen collection as well as a processing method, which enriches the relevant components of the cell sample. Overseas experience has shown a marked increase in the detection of high-grade abnormalities and reduction in unsatisfactory samples. The SurePath™ System includes the next generation computer assisted screening the FocalPoint™ GS Slide Profiler. Known as Intelligent Pap Imaging™, this state-of-the-art guided screening (GS) technology is capable of rapidly locating the microscopic fields of most interest to the cytologist for review, and has been shown to improve productivity and increase detection of cervical abnormalities.

This decision continues QML Pathology's commitment to providing the latest technology relating to cervical cancer screening and in particular relating to liquid based cytology. It is now well documented that liquid based cytology reduces unsatisfactory specimens and increases

the detection rate of cervical abnormalities. ThinPrep™ technology has been offered at QML Pathology since 1997 and from 2006, computer assisted screening of ThinPrep™ slides has been utilised. A recent publication from this laboratory showed a reduction in unsatisfactory specimens and an improvement in sensitivity for ThinPrep™ Imaging over conventional cytology for the detection of high-grade squamous abnormalities.

We believe the future of cervical screening lies with liquid based cytology and predict its introduction into the Australian cervical screening program as a replacement rather than adjunct to the conventional smear some time in the future. Laboratories in our national pathology network are currently testing SurePath™ technology with the view of immediate implementation of the system nationally. It is likely the system will be offered at a more competitive rate than our current liquid based cytology system and QML Pathology looks forward to the introduction of this alternative liquid based system in 2010.

## WARFARIN DOSING OVER THE CHRISTMAS PERIOD

Over the upcoming Christmas period, the QML Pathology Warfarin Care Clinic will be closed. Please note that NO NEW REGISTRATIONS will be taken from 6.00pm on Friday, 18 December 2009, with the registration line re-opening at 7.00am on Monday, 4 January 2010.

During this period it is essential that any new patients on warfarin are supplied with instructions, as QML Pathology will be unable to monitor them until we re-open in January. Unfortunately, QML Pathology cannot provide warfarin control for patients under a period of two weeks.

As a result, we would appreciate if you could arrange a colleague to supervise any warfarin patients you control while you are on leave. Please note that this also applies to interstate patients on holiday in Queensland.

## >> Important Changes to QML Pathology Pap Smear Follow up Information

QML Pathology has provided Normal and Abnormal Follow up Lists and Pap Summary Reports to our referrers for over 10 years. These reports assist in identifying those patients who are due for routine as well as early follow up smears, and give important feedback on the quality of Pap smear taking to our referrers.

### **Normal Follow up Lists**

The Queensland Pap Test Register is now well established, and in recent years has refined its system of reminder letters to both patients and referrers. There is now considerable overlap between this system and QML Pathology follow up lists. For this reason from January 2010, QML Pathology will no longer provide Normal Follow up Lists but will continue to provide Abnormal Follow up Lists and Pap Summary Reports to our referrers.

We continue to meet NPAAC requirements by forwarding to the Queensland Pap Test Register all cytology and gynaecological histology results for all patients who have not 'opted off' the register and by providing feedback to our referrers on Pap smear quality via the monthly Pap Summary Reports.

Any questions relating to these reports can be referred to your local Medical Liaison Officer or the Cytology Department on (07) 3121 4009.

### **Provision of Pap Summary reports for Pap Smear Providers (PSPs)**

QML Pathology Pap Summary Reports are now available for nurses who are registered to collect Pap smears. These reports list all smears collected per quarter by result category, as well as summarising important data relating to unsatisfactory smears and smears containing an endocervical component.

PSPs who attend at more than one surgery may receive their summaries in one easily identifiable report. Each report will contain only those smears collected by each PSP.

For information on how to receive these reports please contact your local Medical Liaison Officer or the Cytology Department on (07) 3121 4009.

## >> QML Pathology Thrombophilia-Warfarin Review Clinic

The QML Pathology Haematologists have established a special review clinic in Brisbane for warfarin patients.

As you are aware, all patients continuing on INR monitoring require a new Rule 3 Exemption every six months to allow the patient to continue to receive a rebatable PT/INR. With all new Rule 3 requests we ask that the need for ongoing warfarinisation be assessed. Many patients have commenced on warfarin in the past and the indications for continuing sometimes appear obscure. This is particularly applicable for patients who no longer have contact with the doctor who initiated their therapy and/or their present doctor does not feel comfortable making these decisions.

On this basis, the QML Pathology Thrombophilia-Warfarin Review Clinic has been established and is designed for such patients who cannot get a ready specialist review elsewhere.

The Clinic is only targeting patients with:

- A history of Venous Thromboembolism OR
- A history of Thrombophilic defect without prior thrombosis.

To organise an appointment for your patient, please call Maureen Meikle, Haematologist Support Officer on (07) 3121 4061.

### **New Collection Centres**

#### **Alexandra Hills**

189 Vienna Rd  
Phone: (07) 3824 6895  
Opening Hours: 8.00am - 12.00pm (Mon-Fri)

#### **Bundaberg**

Church Pharmacy, Cnr Woongara and Barolin Sts  
Phone: (07) 4152 5947  
Opening Hours:  
8.00am - 11.30am, 12.00pm - 3.00pm (Mon-Fri)

#### **Greenbank**

Greenbank Shopping Centre, Cnr Teviot Rd & Pub Ln  
Phone: (07) 3297 6057  
Opening Hours: 8.00am - 1.00pm (Mon-Fri)

#### **Hillcrest**

Shop 7C, Middle Road Shopping Village  
Cnr Middle & Coronations Rds  
Phone: (07) 3806 9617  
Opening Hours: 8.00am - 1.00pm (Mon-Fri)

#### **The Gap**

Suite 5, 23 Glen Affric St  
Phone: (07) 3511 0568  
Opening Hours: 7.30am - 3.30pm (Mon-Fri)

### **Temporary Relocation**

#### **Mt Tamborine - till approx. mid 2010**

Suite 5, 18 Main St, North Tamborine  
Phone: (07) 5545 3873  
Opening Hours:  
7.30am - 1.00pm, 2.00pm - 4.00pm (Mon-Fri)