



## Ureaplasma

*Ureaplasma* was first described as a human pathogen implicated in non-gonococcal urethritis in 1954; there were reports of a possible association of this organism in adverse pregnancy outcomes and low birth weight in neonates. Since then, additional evidence has accumulated implicating *Ureaplasmas* in infertility, postpartum endometritis, chorioamnionitis, spontaneous abortion, stillbirth, premature birth, perinatal morbidity and mortality, pneumonia, bacteraemia, meningitis, and chronic lung disease of prematurity, also known as bronchopulmonary dysplasia (1).

*Ureaplasmas* are wall-less bacteria that have a requirement for cholesterol and characteristically perform urea hydrolysis. The complex and fastidious nutritional requirements necessary for *in vitro* cultivation make *Ureaplasmas* a good target for detection via molecular amplification techniques.

## Ureaplasma infections

### ***Non-specific urethritis***

Non-specific urethritis is an inflammation of the urethra which is not caused by gonorrhoeal infection; this may also be referred to as non-gonococcal urethritis. *Ureaplasma* species can be found on the mucosal surfaces of the cervix or vagina of 40 to 80% of sexually mature asymptomatic women. Some authors believe that *U. urealyticum* is a causative agent of non-gonococcal urethritis (2). However, other studies have found that other microorganisms such as *Chlamydia trachomatis* (20%), *Mycoplasma genitalium* (9%), adenoviruses (4%), and HSV1 (2%) are more common in cases of non-gonococcal urethritis than *U. urealyticum* or *U. parvum* (3).

### ***Neonatal Respiratory Disease***

Respiratory disease remains the most common cause of perinatal morbidity and mortality, especially in preterm infants, despite the many advances in neonatal intensive care and resuscitation and the introduction of artificial surfactant in the early 1990s (4). *U. urealyticum* may be perinatally transmitted to the newborn. Among premature infants, respiratory tract colonization has been associated with the development of pneumonia, precocious dysplastic changes, chronic lung disease, infant wheezing, acute respiratory insufficiency, and even death (4). Older children may present with wheezing, pneumonitis, pertussis-like syndrome and different forms of arthritis (5). The prevalence of *Ureaplasma* in disease is probably underestimated due to the limitations of laboratory diagnosis (6). *Ureaplasmas* are fastidious organisms requiring vigorously quality-controlled medium for cultivation and several days of incubation. These procedures are costly and laborious.

## Cell culture contamination

*Ureaplasmas* have also been found to contaminate cell cultures (7)(8). Contamination of biological materials by *Ureaplasmas* and other mollicutes (including *Mycoplasma* and *Acholeplasma* species) can lead to unreliable experimental results and unsafe biological products (9)(10)(11). Molecular amplification methods have been successfully used to detect such contamination (9).

## Samples acceptable for molecular amplification

Samples used to test for these organisms would include urine, swabs, respiratory specimens (depending on the site of infection) and cultured cells or their supernatant.

## References

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