

Strep steps up in urinary tract infections

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Research suggests pathogenic strains of Group B *Streptococcus* (GBS) are an under-recognised cause of urinary tract infections.

The bacteria are better known as a cause of infection in pregnant women with subsequent risks of preterm delivery and transmission to newborn infants often with devastating consequences.

Microbiologist Dr Glen Ulett, from the Griffith Institute for Health and Medical Research, said pathogenic strains of GBS have been shown to bind to the surface of human bladder cells as the initial step in the development of urinary tract infections.

"Affected cells appear to change their morphology and secrete significant amounts of interleukin, an inflammatory cytokine which activates the body's immune system."

He said the interleukin levels associated with GBS infection were significantly higher than those associated with [Escherichia coli](#), the cause of 90 per cent of urinary tract infections. The findings have appeared in the *Journal of Infectious Diseases*.

"The fact that GBS causes more inflammation than *E. coli* was the exact opposite to what we expected and supports the notion that GBS [urinary tract infection](#) is unique and may cause disease at a lower bacterial count than is typical," Dr Ulett said.

He said because GBS is part of the normal microbial flora of the [genital tract](#) in about 40 per cent of healthy women, isolation of the bacteria in urine samples was often attributed to contamination of the sample rather than an possible indicator of disease.

"Because there are no clearly defined risk factors for GBS infection, the high prevalence of the bacteria, and the difficulties of diagnosis, we are probably often overlooking this organism as a cause of urinary tract infections."

Dr Ulett said a clinical study of over 34,000 patients published last year in collaboration with Westmead Hospital, University of Queensland and the University of Alabama, showed that non-typeable GBS serotypes were not associated with urinary tract infections as was previously thought.

"Importantly, we showed that GBS serotype III was the only serotype more commonly associated with urinary tract infections compared with other serotypes. This gives us a better understanding of the potential targets for vaccine development."

He said while a vaccine to protect women against GBS urinary tract infections may not be a priority on its own, it may be a spin-off benefit from the need to protect newborn infants against fulminating GBS infection through maternal vaccination.

More information:

Journal of Infectious Diseases 2010; 201:866-70.
Journal of Clinical Microbiology 2009; 47(7):2055-2060.

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