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Kingella kingae

Characteristics

Kingella kingae is a gram-negative facultative anaerobic coccobacillus belonging to the *Neisseriaceae* family. *Kingella kingae* cells resist decolourisation and thus can be incorrectly identified as gram positive. It is a beta haemolytic, non-motile, non-spore forming bacterium.

Colonisation and transmission

Kingella kingae is transmitted from person-to-person through close contact, primarily by respiratory secretions. *Kingella kingae* colonises the oropharynx of young children; colonisation is low at 6 months, increasing in 12 months, remaining stable between 12 and 24 months and finally decreasing at 30 months (Yugupsky P, 2015). The colonised epithelium is the source of blood stream invasion and dissemination. Strains carried in the pharynx show variable degrees of invasiveness; many colonising strains are uncommon agents of clinical disease while a few highly virulent clones are responsible of the bulk of infections (Amit et al, 2012).

Infection

Manifestations of *Kingella kingae* infection include, but are not limited to: skeletal infections (septic arthritis and osteomyelitis), endocarditis and bacteraemia. Skeletal infections are the most frequently seen infection, affecting children under the age of four. Endocarditis* is less prevalent and typically affects older children and adults with predisposing health conditions.

**Kingella kingae* is one of the HACEK organisms.

Presentation

With the exception of patients with endocardial involvement, children with *Kingella kingae* infection often only present with mild symptoms and signs such as upper respiratory tracts symptoms and diarrhoea (Yugupsky P, 2015).

Identification

Kingella kingae is a fastidious organism and therefore isolation on routine solid media is suboptimal. Detection of the bacterium is significantly improved by inoculating exudates into blood culture bottles. Nucleic acid amplification techniques are also valuable detection tools (Yugupsky P, 2015).

Our assay:

At Micropathology Ltd, a real time probe-based assay is employed for the qualitative detection of *Kingella kingae* DNA. The limit of detect of this assay is 130 copies/mL. Amplification has been demonstrated in Joint fluid. This assay is not currently UKAS accredited.

Reference:

Yagupsky P. (2015). Kingella kingae: carriage, transmission, and disease. *Clinical microbiology reviews*, *28*(1), 54–79. https://doi.org/10.1128/CMR.00028-14

Amit, U., Porat, N., Basmaci, R., Bidet, P., Bonacorsi, S., Dagan, R., & Yagupsky, P. (2012). Genotyping of invasive Kingella kingae isolates reveals predominant clones and association with specific clinical syndromes. *Clinical infectious diseases : an official publication of the Infectious Diseases Society of America*, *55*(8), 1074–1079. https://doi.org/10.1093/cid/cis622