

Isolation of *Moraxella catarrhalis* in patients at King Khalid University Hospital, Riyadh

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ABSTRACT

Objectives: A retrospective study was carried out to assess the clinical significance of *Moraxella catarrhalis* (*M. catarrhalis*) isolated from 32 specimens received from patients seen during a 2 year period.

Methods: The identity of isolates was confirmed by DNase production and reduction of nitrate to nitrite. Susceptibility testing and β -lactamase production was carried out for each isolate.

Results: Twenty three of the patients were adults and 9 were children. Twelve (37%) of the isolates were from the sputum of patients aged more than 50 years with a clinical diagnosis of pneumonia, bronchitis or bronchiectasis. Six (18%) had *M. catarrhalis* isolated from sputum and had underlying cardiac, liver diseases or diabetes mellitus. The organism was isolated from the blood of one patient with pneumonia and one with leukaemia. It was also isolated from patients with sinusitis, conjunctivitis or otitis

media. Twenty seven (84%) of the 32 strains produced β -lactamase, resistance to erythromycin and clindamycin was detected in 13% of the isolates. All isolates were susceptible to ciprofloxacin, tetracycline, trimethoprim-sulfamethoxazole, gentamicin, chloramphenicol, polymyxin B and neomycin.

Conclusion: This study showed that *M. catarrhalis* can be an important respiratory tract pathogen in adults and children, able to invade the blood stream of patients with predisposing respiratory conditions and underlying systemic illnesses, as well as immunocompetent patients. Since most strains produce β -lactamase, antibiotic therapy should be guided by *in-vitro* susceptibility tests.

Keywords: *Moraxella catarrhalis*, bronchopulmonary infection, extrapulmonary infections.

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Moraxella (Branhamella) catarrhalis is now accepted as the third most common respiratory tract pathogen after *Streptococcus pneumoniae* (*S. pneumoniae*) and *Hemophilus influenzae* (*H. influenzae*).^{1,2} The bacterium colonizes the human respiratory tract and occasionally the genital tract.^{2,4} Colonization of the upper respiratory tract is influenced by age and viral or mycoplasmal respiratory tract infections.³ Nasopharyngeal colonization happens in 66% of children by the age of one year and in 77.5% by the age of 2 years.⁶ In contrast, only 1 - 5% of healthy adults are colonized

by *M. catarrhalis*.²

However in one study *M. catarrhalis* was recovered from the sputum of 83% of adult patients with chronic lung disease.⁷ *M. catarrhalis* causes otitis media in infants and children, and bacterial tracheitis, sinusitis and atypical pseudocroup in preschool children.^{5,8} It also causes conjunctivitis in infants and adults.¹ In adults *M. catarrhalis* has been associated with exacerbations of chronic obstructive pulmonary disease (COPD), pneumonia and nosocomial respiratory tract infections.^{2,9} Invasive diseases due to *M. catarrhalis* are relatively

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