Prevalence and risk assessment of CA-MRSA nasal colonization in patients of Loghman Hospital, Tehran, Iran

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Objectives: Community-associated methicillin-resistant Staphylococcus aureus (CA-MRSA) is a serious pathogen and its nasal carriage is a risk factor for subsequent infections. This study aims at determining the prevalence of and risk factors for CA-MRSA colonization at the time of hospital admission in our community.

Methods: In one year period, patients coming to the emergency department of our hospital were interviewed and anterior nares cultures were obtained within 24 hours of admission. Antibiotic susceptibility tests were performed. A positive culture of MRSA within 24 hours of admission was considered as CA-MRSA. Chi-square test was performed for assessment of associations between culture results and the studied risk factors.

Results: 56 (14%) and 11 (2.7%) of 400 patients had a nares culture positive for S. aureus and MRSA respectively. HIV infection (P value = 0.001), nursing homes residence (P value = 0.033) and nasal anatomic abnormalities (P value = 0.033) had significant association with CA-MRSA cultures. However in logistic regression, no statistically significant association was found. 45% of MRSA cultures showed induced resistance to clindamycin on D-test. On tigacyline E-test, based on a 12 μg/ml cutoff for susceptibility, 6 (54.5%) showed resistance.

Conclusion: Our study showed CA-MRSA prevalence to be 2.7% and didn't demonstrate any association between recent hospitalization, antibiotic use and intravenous drug abuse with CA-MRSA carriage unlike other studies. This may have been a result of CA-MRSA low prevalence.

In vitro activity of fusidic acid against Staphylococcus aureus strains

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Aim: to investigate the in vitro susceptibility of S. aureus strains to fusidic acid that isolated from community and hospitalized patients during January 2008 to November 2010.

Materials and Methods: The material comprised 140 strains of S. aureus [74 methicillin-sensitive (MSSA) and 66 methicillin-resistance (MRSA)]. Identification of microorganisms and susceptibility test was performed with the Vitek 2 Compact (BioMerieux® France) and susceptibility disc diffusion method according to CLSI directions. Oxacillin MIC test was determined with Vitek 2 Compact (BioMerieux®) and confirmed furthermore with E-test method (BioMerieux® France). The S. aureus ATCC 29213 was used as a control strain. Strains with MIC value ≥2 mg/L were interpreted as resistance to fusidic acid.

Results: 114/140 of S. aureus strains were isolated from inpatients (54 MRSA and 60 MSSA) and 26/140 (12 MRSA and 14 MSSA) from outpatients. Intra-hospital strains were isolated from pus (n = 29), blood (n = 19), urine (n = 2), CVC (n = 1), traumas (n = 53), tracheal secretions (n = 1), body fluids (n = 9). Community strains mainly originated from trauma (n = 12), pus (n = 11), trachea fluid cultures (n = 3). None of the MSSA strains were found to be resistant to fusidic acid while 3/91 MRSA strains were resistant and 2/91 were intermediate. The resistance (R+I) of S. aureus strains to fusidic acid for outpatients and inpatients respectively were: 40% and 31% in 2008 to 44% and 41% in 2010. The resistance (R+I) of MRSA for inpatients was 48.15%, for MSSA 8.3% and of MRSA for outpatients 75%.

None of the outpatients' strains MSSA showed resistance to fusidic acid. No strain of S. aureus showed resistance to vancomycin, daptomycin, telcocin and linezold.

Conclusions: Fusidic acid can be considered as an alternative drug for the treatment of infections due to both MRSA and MSSA strains. It has only a few side effects and is usually well-tolerated by patients as an oral drug.

High prevalence and molecular analysis of macrolides-nonsusceptible M. catarrhalis isolated from nasopharynx of healthy children in China

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Objectives: To investigate the high prevalence and molecular analysis of macrolides-nonsusceptible M. catarrhalis isolated from nasopharynx of healthy children in China.

Methods: All isolates were determined for susceptibilities to common drugs using E-test method in accordance with manufacturers' guidelines, and broth microdilution method was used to check the results of macrolides-nonsusceptible M. catarrhalis; Production of β-lactamase was performed by nitrocefin test; The method of PCR and sequence analysis was used to detect the presence of ermA, ermB, ermC, ermA, mefA, mefE genes and the presence of mutations in 235 rRNA gene among the 171 strains of M. catarrhalis (153