



Conclusion: A review of the English-language literature revealed only six case reports of *A. meyeri* empyema, being the present case the first one reported in Portugal. Four of six patients underwent a surgical procedure, and the duration of antibiotic therapy ranged from 4 to 12 months. In comparison to most of the previous reports, the present case was diagnosed early and was effectively drained with only a chest tube. Additionally, there was no evidence of dissemination and symptoms and radiological findings were rapidly improved, demonstrating that short-term antibiotic treatment may be attempted when the adequate management is promptly instituted according to an early diagnosis and if there is no evidence of dissemination. In conclusion, empyema due to *A. meyeri* is uncommon, and anaerobic culture of pleural fluid plays a main part in the early diagnosis of actinomycosis involving pleura. Although the loculated pleural effusion was large, early diagnosis and successful drainage may abbreviate the duration of treatment.

<http://dx.doi.org/10.1016/j.ijid.2016.02.333>

Type: Poster Presentation

Final Abstract Number: 41.140
 Session: Poster Session I
 Date: Thursday, March 3, 2016
 Time: 12:45-14:15
 Room: Hall 3 (Posters & Exhibition)

Detection of (hld) gene from staphylococcus epidermidis strains isolated from ICU of Rasul-e Akram hospital, Tehran-Iran

A. Ebrahimzadeh Namvar¹, A. Gholami^{2,*}

¹ Department of Microbiology, Faculty of Medicine, Babol University of Medical Sciences, Babol, IR Iran, Babol, Iran, Islamic Republic of

² Student of Research Committee, Babol University of Medical Sciences, Babol, Iran, IR Iran, Babol, Iran, Islamic Republic of

Background: Coagulase negative Staphylococci are the most important hospital pathogens. According to the bacterial virulence factors such as potential ability for biofilm formation and also the emergence of methicillin-resistant strains, delta toxin may lead to the great clinical significant concerns. Delta toxin is encoded by the (hld) gene and a similar system called (agr), which is responsible for regulating.

Methods & Materials: In this study, a total of 55 isolates of invasive Staphylococcus epidermidis were collected from different ICU samples of Rasul-e Akram hospital, Tehran, Iran, due to CDC criteria for coagulase negative staphylococci guidelines. All of the isolates were confirmed by API and delta toxin synergistic hemolysis test, finally the prevalence of (hld) gene was estimated by PCR molecular

test with specific primers which were designed by primer designer software

Results: Amongst recovered specimens, both blood samples and ear wound infections with (34.5%) and (3.5%) showed the highest and lowest percentage respectively. The synergistic hemolysis was evaluated (58.2%) by phenotypic method, while in genotypic method the frequency of hld gene was determined (74.5%).

Conclusion: The prevalence of delta toxin as an important virulence factor in *S. epidermidis* is considered as an essential aspect for determination of invasive strains. In similar studies the mentioned factor has been investigated in NICU while in present study we have compared the both NICU and ICU wards.

<http://dx.doi.org/10.1016/j.ijid.2016.02.334>

Type: Poster Presentation

Final Abstract Number: 41.141
 Session: Poster Session I
 Date: Thursday, March 3, 2016
 Time: 12:45-14:15
 Room: Hall 3 (Posters & Exhibition)

Single-domain antibody selected from the phage display library neutralizes Escherichia coli endotoxin-induced effects on leukocytes in vitro and in Swiss albino mice



A.K. Gupta^{1,*}, A. Singh²

¹ Lala Lajpat Rai University of Veterinary and Animal Sciences, Hisar, Hisar, Haryana, India

² Lala Lajpat Rai University of Veterinary and Animal Sciences, Hisar, Hisar, India

Background: Lipopolysaccharide (LPS), also called endotoxin, released from G^{-ve} bacteria has a predominant role in sepsis through excessive production of pro-inflammatory mediators. Attempts to design rational therapies against endotoxemia and sepsis continue. The objective of the present study was to assess the ability of single-domain antibody clones selected from phage display library to neutralize LPS-induced effects on murine and buffalo leukocytes in vitro and in Swiss albino mice.

Methods & Materials: Three dAb.HA clones (CI-18, CI-23 and CI-26) originally selected as LPS-binders from the phage display library of LPS-immunized Indian desert camel were sub-cloned in pET303/CT vector/BL21(DE3) host system and expressed as dAb.6xHis clones. The clones were purified by Nickel-chelate chromatography, and confirmed by SDS-PAGE and immunoblotting. The nucleotide sequences of the clones were determined.

Results: All the dAb clones reacted with both LPS and lipid A in indirect ELISA and exhibited thermo-stability. The affinity constants (K_a) of dAbCI-26, dAbCI-18 and dAbCI-23 for LPS were 4.28 x10⁸/M, 2.18 x10⁸/M and 2.19x10⁸/M, respectively. Both dAbCI-26 and dAbCI-18 decreased the LPS-induced expression of TNF α , IL-1 β and MHC II genes in buffalo leukocytes, and IL-1 β , IL-6, CD80, MHC-II and TNF α (only CI-26) genes in murine macrophages, but dAbCI-23 increased buffalo TNF α and MHC-II, and the murine genes as measured by RT-qPCR. The dAbCI-26 and dAbCI-18 decreased,



but dAbCl-23 increased LPS-induced TNF α levels in Swiss albino mouse model.

Conclusion: In conclusion, dAbCl-26 was able to neutralize LPS-induced effects in murine and buffalo macrophages, and in vivo in mice.

<http://dx.doi.org/10.1016/j.ijid.2016.02.335>

Type: Poster Presentation

Final Abstract Number: 41.142

Session: Poster Session I

Date: Thursday, March 3, 2016

Time: 12:45-14:15

Room: Hall 3 (Posters & Exhibition)

Study on the frequency of spa gene in *Staphylococcus aureus* isolates from human infections and its relationship with mecA gene



M. Haghkhah*, Z. Lotfi

Shiraz University, School of Veterinary Medicine,
Shiraz, Iran, Islamic Republic of

Background: *Staphylococcus aureus* is the most important cause of nosocomial infections acquired in the community. Today, *S. aureus* has been known as one of the most important global problems because of its high virulence and increasing resistance to antimicrobial drugs. Due to the high mortality rate of nosocomial infections associated with methicillin-resistant *S. aureus*, identification and knowledge of the regional model is necessary for the proper treatment of infections caused by this organism. On the other hand, genotyping of the isolates of this bacterium can be widely used because we can identify the source of infection. The molecular techniques have been developed to determine the genetic of the isolates. One proposed method is examination of polymorphism X region of the protein A gene (*Spa*) by PCR method. This region is one of the distinguishing factors and different patterns of this gene have been identified in various studies. Typing the isolates of *S. aureus* using *Spa* gene can be a useful method for epidemiological studies.

Methods & Materials: In this study, 115 samples of *S. aureus* isolated from human infections after culture on blood agar and mannitol salt agar and catalase and oxidase tests were examined by PCR.

Results: PCR method using *Sau* primers showed that 103 (89.6%) out of 115 isolates revealed as *S. aureus*. Isolates for *mecA* gene were 96 (93.2%) positive and 7 (6.8%) negative. Ninety one (88.3%) and 12 (11.7%) were positive and negative for *Spa* gene respectively. A total of 86 (85.3%) were positive for both genes. Ten (8.9%) samples were positive for *mecA* gene, not for *Spa* gene, 5 (4.8%) were negative for *mecA* gene, and 2 (1.9%) were negative for both genes.

Conclusion: All differences between the groups using non-parametric chi-square test were significant ($P=0.04$). In general conclusion, this study showed that most MRSA have virulence genes such as *Spa* and play a critical role in nosocomial infections.

<http://dx.doi.org/10.1016/j.ijid.2016.02.336>

Type: Poster Presentation

Final Abstract Number: 41.143

Session: Poster Session I

Date: Thursday, March 3, 2016

Time: 12:45-14:15

Room: Hall 3 (Posters & Exhibition)

Meningococcal pneumonia in Japan: A case report and review of the literatures



J. Hirai^{1,*}, T. Kinjo¹, T. Tome², K. Uechi², M. Nakamatsu¹, S. Haranaga¹, J. Fujita¹

¹ Faculty of Medicine, University of the Ryukyus, Okinawa, Japan

² University Hospital of the Ryukyus, Okinawa, Japan

Background: Although previous report showed that *Neisseria meningitidis* (*N. meningitidis*) was detected from oral cavity of healthy Japanese volunteers, pneumonia caused by this pathogen is very rare in Japan. Here, we present a case of non-invasive meningococcal pneumonia and review case reports in Japan.

Methods & Materials: We searched Japanese case reports of meningococcal pneumonia with Pubmed and the search engine operated by Japan Medical Abstracts Society. The data including the present case were pooled into the following categories for analysis: age, sex, co-morbidities, travel history, symptom, present of bacteremia, patterns of chest images, treatment, prognosis, and serotype of *N. meningitidis*.

Results: We found 15 cases in the 9 literatures published between 1984 and 2015. The median age of the patients was 42.0 years (range: 18 to 78 years), and men were predominant (68.8%, 11 of 16 patients). The most common underlying condition was respiratory diseases (50.0%) such as asthma, chronic obstructive pulmonary disease, interstitial pneumonia, and diffuse panbronchiolitis. The second most underlying disease was mental disorder (25.0%). Two patients (12.5%) had a travel history. Fever, cough, dyspnea, disturbance of consciousness, and chest pain were noted in 68.8%, 62.5%, 25.0%, 12.5%, 6.3%, respectively. Blood cultures were positive in 2 of 16 cases (12.5%), but no patient developed meningococemia despite the present of bacteremia. Bilateral chest infiltration was observed in 2 cases (18.2%), and right- and left-sided pneumonia were 7 (63.6%), 1 (9.1%), respectively. Beta-lactams were used in 11 cases (78.6%). All cases were cured with appropriate antibiotics. Serogroup B meningococci were identified in 5 cases (31.3%). There were 3 cases of nosocomial transmission and one case of intra-familial infection.

Conclusion: In our study, there was no meningococcal pneumonia with meningitis. All cases were recovered by prompt and appropriate treatments. We reconfirmed that meningococcal pneumonia was very rare in Japan, particularly after 2009. Since national survey of invasive meningococcal disease has started from April 2013 in Japan, the case report of meningococcal pneumonia might be increased in the future.

<http://dx.doi.org/10.1016/j.ijid.2016.02.337>