Type: Poster Presentation

Final Abstract Number: 59.037
Session: Diagnosis
Date: Saturday, April 5, 2014
Time: 12:45-14:15
Room: Ballroom

Identification of mannitol positive coagulase negative staphylococci from poultry litter in Nigeria

T. Obisesan[1], U. Ruffing[2], A. Nimmesgern[2], M. Herrmann[2], L. Müller[2], A. Shittu[1,*]

[1] *Obafemi Awolowo University, Ile-Ife, Nigeria*
[2] *University of Saarland, Homburg/Saar, Germany*

Background: Poulty litter is widely regarded as one of the routes of dissemination of antibiotic resistant bacteria including antibiotic-resistant coagulase negative staphylococci (CNS) from animals to man. However, the identification of CNS to the species level is not usually performed due to the complexity of the process as well as time and cost implications. This study evaluated and compared an identification scheme with MALDI-TOF for mannitol positive CNS and determined the susceptibility of the isolates to various antibiotics.

Methods & Materials: Faecal samples were obtained from six poultry farms located in Ile-Ife, Nigeria from February to October, 2012. The identification scheme was based on oxidase and urease tests, susceptibility to novobiocin, bacitracin and polymyxin, and acid production from mannose, maltose, mannitol and sucrose. MALDI-TOF was performed at the Institute of Medical Microbiology and Hygiene, Homburg, Germany. Antibiotic susceptibility testing was determined in line with the recommendations by the Clinical and Laboratory Standards Institute.

Results: A total of 66 mannitol positive CNS isolates were obtained from 450 faecal samples of poultry birds. Based on the simplified scheme, the isolates were identified as follows: S. sciuri (54), S. saprophyticus (3), S. lentus (1), and others (8). MALDI-TOF results classified the isolates as S. sciuri (56), S. kloosii (4), S. saprophyticus (3), S. chromogenes (1), S. nepalensis (1) and S. lentus (1). The levels of agreement between the two methods for the identification of S. sciuri, S. saprophyticus and S. lentus were 96.4%, 100% and 100%, respectively. The oxidase test was useful in distinguishing S. sciuri from S. lentus, and the urease test and acid production from mannose for S. sciuri and S. saprophyticus. A total of 53 of the 66 isolates (80.3%) were resistant to at least three classes of antibiotics. Of 50 tetracycline-resistant S. sciuri isolates tested, the tetracycline resistant genes tetK and tetM were detected in two and twenty-two isolates, respectively.

Conclusion: This study has established that the simplifed scheme is a useful and effective tool for CNS identification (especially S. sciuri) in resource-limited settings, and multiresistance is a common feature in staphylococcal isolates obtained from poultry litter in Nigeria.

http://dx.doi.org/10.1016/j.ijid.2014.03.1199

Type: Poster Presentation

Final Abstract Number: 59.038
Session: Diagnosis
Date: Saturday, April 5, 2014
Time: 12:45-14:15
Room: Ballroom

Diagnostic methods for group A Streptococcus associated with sore throat in Cameroon

H. Gonsu Kamga[1,*], F. Djomou[2], C. Mbimenyuy B[2], M. Toukam[2], F.-X. Mbopi-Keou[3], S. Koulla Shiro[2]

[1] *University of Yaoundé I, Faculty of Medicine and Biomedical Science, Yaounde, Cameroon*
[2] *Faculty of Medicine and Biomedical Sciences, University of Yaounde I, Yaounde, Cameroon*
[3] *Ministry of Health & University of Yaounde I, Yaounde, Cameroon*

Background: The most pathogenic bacterial microorganism associated with sore throat is *Streptococcus pyogenes*. The diagnosis is most often based on clinical management resulting to treatment failures and relapses. The main objective of this study was to assess the diagnostic value of a rapid streptococcal antigen detection test in patients with sore throat, using culture as reference test.

Methods & Materials: From January to April 2011, a cross sectional study was carried out on 71 patients aged 3-72 years, presenting with signs and symptoms of sore throat at the University Teaching Hospital and the Central hospital of Yaounde in Cameroon. Two throat samples were collected per patient. One swab was used for the rapid diagnostic test (RADT) using a commercial antigen test (INSTALERT, Innovacon, Inc.CA 92121, USA) and the other swab was used for bacteriological analysis. Detection of streptococcal antigen was done using rapid antigen diagnostic test alongside culture in Columbia blood agar supplemented with nalidixic acid. Identification of streptococci was achieved by Lancefield agglutination. Antibiotic sensitivity was done by disc diffusion method on Mueller Hinton blood agar.

Results: The most frequently clinical features in all patients was dysphagia, followed by fever. Only 21(29.6%) patients suffered from swollen cervical lymphnodes. Of the 71 samples collected, the RADT detected group A streptococcal antigens in 12 of 16 culture positive samples giving a sensitivity of 75%. This test was also positive in 2 specimens for group C and G Lancefield classification with a total of 53 true negatives. The specificity of the rapid test was 96%, with a positive predictive value of 85.7%, and a negative predictive value of 93%. The test was more sensitive (83.3%) for patients between the age group of 3 and 15years. Prevalence of Group A Streptococci was 22.5%. Two third of isolates (68%) were sensitive to penicillin G, while a high rate of resistance (64.3%) was observed with erythromycin.

Conclusion: Rapid test have an additional value, however the sensitivity of the test studied was a little lower than expected, thus tests with a higher sensitivity are needed for accurate and reliable results for early diagnosis.

http://dx.doi.org/10.1016/j.ijid.2014.03.1200