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Clinical Isolation case of Stenotrophomonas maltophilia from Libyan hospital

Ezzeddin Sh. Aghila, Samira G. Amri, Emad M Bennour, Yousef M Abouzeed , Mohamed O. Ahmed
Burns and Plastic Surgery Centre, Tripoli, Libya.
Burns and Plastic Surgery Centre, Tripoli, Libya.
Department of Internal Medicine, Faculty of Veterinary Medicine, University of Tripoli, Tripoli, Libya.
Department of Microbiology and Parasitology, Faculty of Veterinary Medicine, University of Tripoli P.O. Box 13662, Tripoli, Libya.
Department of Microbiology and Parasitology, Faculty of Veterinary Medicine, University of Tripoli P.O. Box 13662, Tripoli, Libya

Abstract

Stenotrophomonas maltophilia is an important nosocomial organism increasingly reported with multiple-resistance to important antimicrobial drugs. We report an isolation case of clinical Stenotrophomonas maltophilia from Libyan hospitals. Antibiotic susceptibility testing using automated system showed the multi-resistant typical phenotype of Stenotrophomonas maltophilia against β-lactams drugs and sensitivity for trimethoprim-sulfamethoxazole (MICs>2/38µg/ml). Laboratories must understand the importance of accurate identification and recommendations for nosocomial infection which can be treated successfully with the appropriate antibiotic drugs.

Keywords:

Antibiotic resistance, Stenotrophomonas maltophilia, Nosocomial, Libya

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Case history

Stenotrophomonas maltophilia is an important nosocomial pathogen, responsible for hospital acquired infections and highly resistant to multiple-antibiotic drugs (1-3). Here we report the first isolation case of Stenotrophomonas maltophilia from local hospital in Tripoli, Libya.

The case: In April 2011 a 24 year-old male suffered from post-operation wound infection in the left foot, has presented at a local specialized hospital, Tripoli. Three consecutive daily sampling (each consist of 2 samples) were sent to the laboratory and each tested accordingly by both BDXpert system (PhoenixTM System) and bacteriologically by culture on MacConkey, blood agar for further examination by gram stain and biochemical API system.

The BDXpert system consistently revealed that Stenotrophomonas maltophilia was the causative agent (confident value 99%). Also laboratory examination on grown colonies showed gram-negative bacilli, positive catalase reaction and non-lactose fermenting characteristic on MacConkey agar. Antibiotic susceptibility testing by BDXpert system indicate resistances to ß-lactam antibiotics but susceptibility to trimethoprim-sulfamethoxazole (MICs>2/38µg/ml)..Therapy was altered therafter to trimethoprim-sulfamethoxazole (TMP-SMX) and ciprofloxacin (IV).

Stenotrophomonas maltophilia is an emerging opportunistic pathogen that shows variable resistances to many classes of antibiotic drugs (3, 4). Nosocomial infections and complications due to *S. maltophilia* is not common in Libya however *S. maltophilia* is increasingly recognised as an important nosocomial pathogen, responsible for high morbidity and mortality in hospitalized patients (5, 6). Stenotrophomonas *maltophilia* encodes intrinsic and acquired resistances to many important antibiotics including broad-spectrum β-lactams drugs (7) and delaying antibiotic therapy is a major risk factor for mortality (8). Therefore it is important to accurately and quickly identify *S. maltophilia.*

The mechanism and genetic basis of antibiotic resistance has been discussed however standardized antibiotic susceptibility and sensitivity for Stenotrophomonas maltophilia still undefined (4). Many antibiotic drugs are recommended for treatment and many studies recommended the use of trimethoprim-sulfamethoxazole as the drug of choice mostly combined with different drugs (4). *S. maltophilia* which is resistant to TMP – SXT has also been reported (6).

Antimicrobial resistant bacteria are an increasing emerging problem (9). Such organisms [e.g. MRSA] are of concern as they increase mortality rates and longer hospitalisation. Stenotrophomonas maltophilia is closely related to other nosocomial organisms (i.e. pseudomonas) and the possibility of misidentification of such organisms in Libya has been previously reported (10). Strategies to compact and prevent nosocomial infections are urgently recommended which involve the appropriate use of antibiotic drugs and the application of strict management and infection control system in hospitals. Moreover laboratories play an important role in controlling nosocomial infections and guiding therapy.

Consent

Written informed consent was obtained for publication of this case report.

Competing interests

The authors declare that they have no competing interests.

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