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Drug resistant pattern of bacterial isolates in infected wounds at Bahir Dar Regional Health Research Laboratory Center, Northwest Ethiopia

Derese Hailu¹, Awoke Derbie², Daniel Mekonin², Wondmagegn Mulu², Yesuf Adem², Alem Tsega¹ and Fantahun Biadlegne²¹Bahir Dar Regional Health Research Laboratory Center, Ethiopia²Bahir Dar University, Ethiopia

Background & Aim: An increased antibiotic resistance of bacterial isolates from wound infections is a major therapeutic challenge for clinicians. The aim of this study was to describe bacterial isolates that caused wound infection and determine their current antimicrobial susceptibility pattern.

Method: We analyzed the records of 380 wound swab samples that have been cultured at Bahir Dar Regional Health Research Laboratory from January 2013 to December 2015. Swabs from different wound types were collected aseptically. Antimicrobial susceptibility test was performed using disc diffusion technique as per the standard protocol. Bacteriological and socio-demographic data were collected using a standard data collection format. The data was cleared, entered and analyzed for descriptive statistics using SPSS version 20.

Result: The overall bacterial isolation rate in this study was at 61.6% (234/380). About 123 (52.6%) of the isolates were Gram positive cocci and 111 (47.4%) were Gram negative rods. The predominant isolate was *Staphylococcus aureus* at 100 (42.7%) followed by *Escherichia coli* 33 (14.1%), *Pseudomonas aeruginosa* 26 (11.1%) and *Streptococcus pyogenes* 23 (9.8%). The overall rate of Multidrug Resistant (MDR) bacterial pathogens that caused wound infection was 54.7%. Out of these, 35 (15.1%) of the isolates were resistant to more than five antibiotics. Ampicillin had the highest resistance rate at 85.9% among Gram negative isolates, whereas the highest resistance rate among Gram positive isolates was in erythromycin at 31.1%.

Conclusion: In the studied region, higher frequency of mono and multi drug resistance of bacterial pathogens that caused wound infection was documented. Thus, a new method to the causative agent and antimicrobial susceptibility testing surveillance in areas where there is no culture facility is needed to assist the health professionals in the selection of appropriate antibiotics.

deresehailu86@gmail.com