Short Communication

Antibacterial effect of Methanolic extract of *Camellia Sinensis L.* on *Pseudomonas aeruginosa* strains producing β-lactamases

Hashemi A (MSc)*[1], Shams S (MSc)[2], Kalantar D (MSc)[3]
Taherpour A (MSc)[1], Barati M (MSc)[4]

[1]PhD candidate in Medical Bacteriology, Shahid-beheshti University of Medical Sciences, Tehran, Iran. [2]Microbiologist, Department of Microbiology, Qom University of Medical Sciences, Qom, Iran. [3]PhD Candidate in Medical Bacteriology, Department of Microbiology, Tehran University of Medical Sciences, Tehran, Iran. [4]PhD Candidate in Medical Parasitology, Department of Parasitology, Tehran University of Medical Sciences, Tehran, Iran.

Abstract

Background and Objective: *Pseudomonas aeruginosa* is one of the important causes of nosocomial infections. Extended spectrum-beta Lactamases (ESBLs) and Metallo-beta Lactamase (MBL) producing strains have become resistant against a wide range of antibiotics. The aim of this study was to determine the effect of Methanol extract of *Camellia Sinensis* on *Pseudomonas aeruginosa* producing ESBL isolated from burnt wounds of patients.

Materials and Methods: This descriptive study was done on burnt wounds of 245 hospitalaized patients in Shafa hospital, Kerman, Iran during 2006-07. ESBLs producing strains were detected by phenotypic confirmatory test and also E-test strips were used for MBL detection. P.aeruginosa MIC was determined for Cefotaxime, Ceftazidime, Azteronam, Imipenem, Meropenem and methanol extracts of plant *Camellia Sinensis* prepared by Maceration method.

Results: 120 of burnt wound infected with P.aeruginosa, out of them 41 isolates contained ESBL while lacked MBL. 60% of isolates were resistant to Cefotaxime, 66% to Ceftazidime, 42% to Azteronam, 3% to Imipenem and 5% to Meropenem. Among the extracts, green Tea had the highest antibacterial effect on standard strains and P.aeruginosa producing ESBLs in 1.25mg/ml concentration.

Conclusion: This study showed that methanolic extract of green tea has higher antibacterial effect aginst β-lactamase *P.aeruginosa* strains than Cefotaxime and Ceftazidime.

Keywords: *Pseudomonas aeruginosa*, ESBL, Antibiotic Resistance, *Camellia Sinensis*

*** Corresponding Author: Hashemi A (MSc), E-mail: hashemi1388@yahoo.com**

Received 23 November 2010 **Revised** 9 April 2011 **Accepted** 20 April 2011

This paper should be cited as: Hashemi A, Shams S, Kalantar D, Taherpour A, Barati M. [Antibacterial effect of Methanolic extract of *Camellia Sinensis L.* on *Pseudomonas aeruginosa* strains producing β-lactamases]. J Gorgan Uni Med Sci. 2012; 14(1): 136-42. [Article in Persian]