Tarek El-Said El-Banna et al., J Drug Metab Toxicol 2016, 7:3 (Suppl)
http://dx.doi.org/10.4172/2157-7609.C1.005

How much misleading the results of *in vitro* antibiotic susceptibility comparing to *in vivo* data

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This study partially clarified how much misleading results of *in vitro* antibiotic susceptibility comparing to *in vivo* data. *In vitro* susceptibility of 30 isolates *(E. coli, P. aeruginosa and S. aureus,* 10 isolates, each, to Ampicillin, Cephradine, Erythromycin and Chloramphenicol and Tenoxicam was determined. All isolates were highly and multiply antibiotics resistant. Tenoxicam had no inhibitory effect and showed no synergistic effect when combined with antibiotics. The *in vivo* effects of the antibiotics on production of certain mediatory markers Interleukin-1b (IL-1b); Tumor Necrosis Factor Alpha (TNF-α); Nitric Oxide (NO); Malondialdhyde (MDA) and Glutathione (GSH) and degree of decrease in developed edema in hind paw in both infected rat wound and acute inflammatory rat model were determined. The calculated data that reflected anti-inflammatory and decreasing oxidative stress and antioxidant activities of antibiotics were compared to that of Tenoxicam and vitamin C. It was found thatTenoxicam and antibiotics, except chloramphenicol, significantly decreased edema and the concentrations of the IL-1b, TNF-α, NO and MDA but significantly increased GSH. Vitamin C decreased MDA but increased GSH. The activities of these antibiotics were equal to or greater than that of Tenoxicam and vitamin C. The healing in infected rat wound groups treated with these antibiotics was achieved in shorter times comparing to that in tenoxicam treated group. In conclusion, the anti-inflammatory and antioxidant activities of tested antibiotics are a possible mechanism, irrespective to their antimicrobial activities, involved in curing and/or relieving infections by highly and multiply resistant bacterial pathogens.

Biography

Tarek El-Said El-Banna has completed his PhD from Tanta University, Egypt and Postdoctoral studies from New Jersey Medical School. He is currently a Professor in the Microbiology Department. He was the Vice Dean Faculty of Pharmacy from 2000-2006 and 2011-2014. He was the Head of Department of Microbiology from 1998-2000, 2007-2010 and 2014-2015. He has published more than 40 papers in reputed journals and has been serving as an Editorial Board Member of repute.

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