Latin American Journal of Pharmacy
(formerly *Acta Farmacéutica Bonaerense)*
Lat. Am. J. Pharm. **40** (1): 155-9 (2021)

Received: August 11, 2020
Accepted: August 22, 2020

Gram Negative Bacterial Resistance to Ciprofloxacin and Levofloxacin in Inpatient Hospital Setting in Alkharj, Saudi Arabia

Nehad J. AHMED

Department of Clinical Pharmacy, College of Pharmacy,
Prince Sattam Bin Abdulaziz University, Alkharj, Saudi Arabia

***SUMMARY*. Gram-negative bacteria can acquire resistance to antibiotics classes that are usually effective against them such as the third- or fourth-generation cephalosporins and fluoroquinolones. The infections that are caused by antimicrobial-resistant organisms lead to treatment failure, increases cost of medical therapy, increase in socioeconomic burden and increases hospitalization stay. This study aims to determine the sensitivity of Gram-negative bacteria to ciprofloxacin and levofloxacin in an inpatient setting of public hospital in Alkharj. The resistance of several Gram negative bacteria especially *Acinetobacter* and *Providencia* to ciprofloxacin and levofloxacin is high. It is important to increase the awareness regarding the use of these medications and it is important to implement interventions to decrease the inappropriate use of quinolones. In addition to that more interventions are required in order to decrease the bacterial resistance such as to take into consideration the patient characteristics including the kidney and liver function status.**

RESUMEN. Las bacterias Gram-negativas pueden adquirir resistencia a clases de antibióticos que suelen ser eficaces contra ellas, como las cefalosporinas de tercera o cuarta generación y las fluoroquinolonas. Las infecciones causadas por organismos resistentes a los antimicrobianos conducen al fracaso del tratamiento, aumentan el costo de la terapia médica, la carga socioeconómica y la estancia hospitalaria. Este estudio tiene como objetivo determinar la sensibilidad de las bacterias Gram-negativas a la ciprofloxacina y la levofloxacina en un entorno hospitalario de un hospital público de Alkharj. La resistencia a la ciprofloxacina y levofloxacina de varias bacterias Gram-negativas, especialmente *Acinetobacter* y *Providencia,* es alta. Es importante aumentar la conciencia sobre el uso de estos medicamentos y es importante implementar intervenciones para disminuir el uso inadecuado de quinolonas. Además de eso, se requieren más intervenciones para disminuir la resistencia bacteriana, como por ejemplo, tener en cuenta las características del paciente, incluido el estado de la función renal y hepática.

KEY WORDS: ciprofloxacin, Gram-negative bacteria, levofloxacin, quinolones, resistance.

* Author to whom correspondence should be addressed. *Email:* n.ahmed@psau.edu.sa

ISSN 0326 2383 (printed ed.)
ISSN 2362-3853 (on line ed.)