ECRONICON OPEN ACCESS

EC PHARMACOLOGY AND TOXICOLOGY
Short Communication

Medication Use Evaluation of Liposomal Amphotericin B at Tawam Hospital

Noora Ibrahim and Tasnim Dawoud*

Pharmacy Department, Clinical Pharmacy Services, Tawam Hospital, Al-Ain, UAE

***Corresponding Author:** Tasnim Dawoud, Pharmacy Department, Clinical Pharmacy Services, Tawam Hospital, Al-Ain, UAE.

Received: September 29, 2021; **Published:** October 29, 2021

Opportunistic fungal infections are uncommon but life-threatening conditions, requiring prompt initiation of antifungals, especially in the immunocompromised and critically ill patients. Liposomal Amphotericin B is widely used as empirical and targeted therapy. Its use has largely replaced the conventional form of the drug, which may exert a substantial financial burden on hospitals [1]. The purpose of this study is to evaluate the appropriateness of Liposomal Amphotericin B use, based on the internationally recommended indications and doses, and to assess its adherence to our local antimicrobial restriction policy. Toxicity was assessed by analyzing patients who developed adverse events to the drug [2].

This is a retrospective cross-sectional review conducted for the purpose of medication utilization evaluation, where medical records of patients admitted to Tawam Hospital, and received Liposomal Amphotericin B between December 2018 and May 2019 were reviewed. Tawam Hospital is a tertiary care referral centre located in the city of Al Ain, Emirate of Abu Dhabi, in the United Arab Emirates. Data was retrieved from our electronic medical record. Collected data included patient's basic demographics, indication for prescribing Liposomal Amphotericin B, dosing regimen, and adherence of prescribing Liposomal Amphotericin B to our local antimicrobial restriction policy. Liposomal Amphotericin B at Tawam Hospital is restricted to Infectious Disease physicians, Hematologists/Oncologists, and Neonatologists. Toxicity was assessed by following the percentage of patients who developed hypomagnesemia, hypokalemia, allergic reactions, and acute kidney injury while on Liposomal Amphotericin B therapy. Acute kidney injury was defined based on the proposed criteria of the Acute Kidney Injury Network (AKIN) 2007 report [3]. We excluded patients transferred from other facilities while on Liposomal Amphotericin B therapy. Descriptive analysis was used to analyse data on excel sheet, by expressing number of occurrences and their percentages. Appropriateness of indications and dosing regimens were assessed according to recommendations of internationally accepted guidelines and drug databases. The study was conducted after approval from hospital's institutional review board.

A total of 38 patients met our inclusion criteria, being admitted at Tawam Hospital and treated with Liposomal Amphotericin B during the specified time period. Among the 38 patients, 55% were males and 45% were females. There was 100% adherence to prescribing the drug according to the antimicrobial restriction policy. Liposomal Amphotericin B was prescribed empirically in 53% (n = 20), as targeted therapy in 34% (n = 13) and as prophylaxis in high-risk patients in 13% (n = 5) of the cases. All indications were considered appropriate and according to the recommendations of the internationally accepted guidelines. Doses were appropriate in 100% of the cases (between 3 - 10 mg/kg/day). The most commonly prescribed indication was empirical in febrile neutropenia (42%), followed by invasive candidiasis in 34%, and empirical for presumed systemic fungal infections in high-risk patients in 24% of the cases. Hypokalemia occurred in 34% (n = 15), hypomagnesemia and allergic reactions in 11% (n = 5) of the cases each. Acute kidney injury was common and occurred in 50% of the cases; for which the majority (79%) were on other nephrotoxic drugs, compared to 11% (n = 4) who developed acute kidney injury due to Liposomal Amphotericin B alone, with no concomitant nephrotoxins. All reported adverse events were reversible.

The study showed that the Liposomal Amphotericin B was appropriately used in our institution and was prescribed with strict adherence to the antimicrobial restriction policy during the specified time period. Half of the patients developed acute kidney injury while on

Liposomal Amphotericin B therapy, with the majority of cases occurring in patients with concomitant nephrotoxic drugs. While all cases of acute kidney injury were reversible, a close monitoring of kidney function while on Liposomal Amphotericin B is highly recommended, especially in patients with other administered nephrotoxins.

Bibliography

1. Garber G. "An overview of fungal infections". *Drugs* 61.1 (2001): 1-12.
2. Drew RH. "Pharmacology of Amphotericin B". Uptodate (2019).
3. Jose Antonio Lopes SJ. "The RIFLE and AKIN classification for Acute Kidney Injury". *Clinical Kidney Journal* 6.1 (2012): 8-14.

Volume 9 Issue 11 November 2021