

Original Research Article

Intravenous Antibacterial Consumption at Sahloul University Hospital from 2018 to 2021

Cherif Amine^{1*}, Belhajmbarek Imen¹, Mhiri Asma^{1,2}, Jardak Maroua^{1,2}, Kacem Balsam^{1,2}¹Department Pharmacy, University Hospital Sahloul Sousse Tunisia²Faculty of Pharmacy of Monastir, University of Monastir, 5019 Monastir, Tunisia

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Abstract: The aim of this study was to assess the pattern of antibiotic consumption in Sahloul University hospital and to identify areas for improvement in the responsible use of antibiotics. The study was conducted over a four-years period and involved a retrospective analysis of the hospital's electronic medical records. The results showed that the most commonly prescribed antibiotics were broad-spectrum agents, particularly cephalosporins and fluoroquinolones. Antibiotic consumption was highest in the surgical and intensive care units. The study also identified a high rate of prescription of antibiotics for viral infections, despite guidelines recommending against their use for such conditions. The findings of this study highlight the need for improved antibiotic stewardship programs in the hospital to reduce the unnecessary use of antibiotics and minimize the emergence of antibiotic resistance.

Keywords: Antibiotic consumption, Daily Defined Dose, Hospitalization days, Covid-19.

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INTRODUCTION

Antimicrobial resistance is a global public health problem. The anti-infective drugs rationalization of use is a hospital pharmacist's responsibility. However, during the COVID 19 pandemic, an abuse of antibiotic's prescription was observed. The objective of our study was to study the profile of antibiotics consumption before and during the COVID 19 pandemic.

MATERIALS AND METHODS

This is a retrospective descriptive study of antibiotics consumption from 2018 to 2021 at Sahloul University Hospital in Sousse. The collection of antibiotic consumption by unit was carried out using the STKMED drug inventory management software. (The unit used to measure the consumption of antibiotics is the DDD defined daily dose (per 1000 hospitalization DDD/ 1000 HD) [1]. The values of DDD and DDD/ 1000 HD were carried out using the Excel document

obtained from the WHO site [2]. To calculate the number of DDDs, it is necessary to have the total quantity in grams of the antibiotic concerned and to divide this quantity by the DDD value in grams for this same antibiotic.

RESULTS

During the study period (2018 to 2021), we noticed a reduction in annual HD sum which regressed from 171 to 141(- 21%). We also noticed a decrease in the total antibiotic consumption, which went from 492 to 390 in 2021 during a four years period. A significant reduced consumption of the aminoglycosides (-55%), glycopeptides (-54%) and Fluoroquinolone (-15%). However, carbapenem and macrolid consumption has been increased respectively by (+31%) and (+15%). Overall, the consumption of Betalactamins has been decreased in 2020 and reprised to its initial level as 270 DDD/ 1000 HD in 2021.

Table 1: Details the evolution of antibiotic consumption from 2018 to 2021:

	Year			
	2018	2019	2020	2021
1000 HD	171	187	136	140
Antibiotic total consumption DDD/1000 HD	492	433	401	390
Aminosoids	39.8	42.4	41.6	18.9
Carbapenems	49.9	44.5	49.5	58.6
Glycopeptids	28.7	30.9	30.1	14.3
Fluoroquinolons	45.1	46.5	42.7	38.1
Betalactamins	260.3	271.6	188	256.3

DISCUSSION

The antibiotic consumption determination using this method DDD/ 1000 HD reveals to be an excellent tool and indicator that allows the consumption monitoring of anti-infective during a defined period and also allows the comparison of this consumption from one department to another, from one center to another at the local, regional, national and international level [1]. During the COVID-19 pandemic, we witnessed an overall decrease in the consumption of antibiotics, mainly due to the decrease in hospitalizations in our institution, and the cessation of scheduled activity surgical activity due to confinement and other measurements.

However, carbapenems consumption has increased during this period. This can be explained in

part by infections associated with care, mainly length infections and also the emergence of multi-resistant germs in various hospitalization units.

CONCLUSION

The pattern of antibiotic consumption in our hospital has changed in the few last years. This change is probably affected by the emergence of resistant bacterial strains. The COVID-19 pandemic has impacted overall antibiotic consumption with an increase in carbapenem consumption.

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