

**EVALUATION OF ANTIBIOTIC USE AND ANTIBIOTIC RESISTANCE IN THE  
DEPARTMENT OF SURGERY, SHAHID BEHESHTI HOSPITAL IN YASUJ, IN  
2016**

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**ABSTRACT**

Attempts to prescribe and correct the use of drugs, especially antibiotics, have always been considered as a major and major policy goal. Although antibiotics are necessary in most bacterial infections and its lack of use is life-threatening, most studies have shown that 30 to 60% of cases have been misdiagnosed and inappropriate.

**Method:** This study was a descriptive and analytical study. The data collected from antibiotic use in the surgery department of Yasuj Shahid Beheshti Hospital were collected. During six months, the use of cefazolin, ceftriaxone, clindamycin, ceftazidime, gentamicin, Vancomycin, meropenem, ami-pene clindamycin and metronidazole were randomly assigned to antibiotic culture.

**Findings:** Of the total 19379 antibiotics consumed over the course of 6 months, 35% of the total antibiotics used are cefazolin, and then 24% is for metronidazole. Separated from ceftriaxone, clindamycin, vancomycin, Imipenem, ceftazidime and Meropenem, the drug was 6 months old.

**Discussion and conclusion:** Considering the excessive consumption of antibiotics in Iran and the imposition of heavy costs on the health of the baby and the health system, and with the data obtained to date, this study also showed that administration of antibiotics is unnecessary and does not depend on the patient's need. Most cases showed a high percentage of antibiotic resistance, which is consistent with other previous studies.

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Therefore, it is necessary to prevent antibiotics from being irrationally consumed by educating both the health system and the people.

**Key words:** Antibiotic, Antibiotic Resistance, Surgery

## INTRODUCTION

Efforts to prescribe and properly use drugs, especially antibiotics, have always been considered as an important and major policy goal for drug treatment, reducing drug doses, taking medication time, reducing treatment costs, and reducing drug resistance from policy goals. Is a drug (1). According to the available statistics, per capita consumption of drugs, especially antibiotics, is high in our country due to the prevailing culture and relative cheapness of medicine, which is approximately four times the global average; while the world's population is more than Of the 235 million doses of antibiotics they use (2). Also, the survey of statistics in our country also shows that antibiotics are the first to sell medicine in the country, with an annual cost of about 120 to 180 billion USD, and 1.2 to 1.3 percent of the drug used is completely unnecessary (3). Unfortunately, antibiotics are one of the most commonly used drugs that are misplaced either by the doctor or by self-medication (4) and despite the fact that antibiotic prescription is necessary in most bacterial infections, and its lack of use can endanger the patient's life. , But most studies have shown that 30 to 60% of cases have been misdiagnosed and inappropriately commonly caused by physicians, distributors, or self-medication (5) and, in addition to creating microbial resistance at the community level, impose Heavy and vain costs to the patient, the drug and treatment system of the countries (2) . Therefore, in countries with high levels of antibiotic use and drug resistance, implementation of new and more effective policies to control uncontrolled antibiotic use seems essential, but since there is no systematic monitoring and evaluation (6) Consequently, regular and effective programs can not reduce the cost of drugs and also control antibiotic resistance, and this requires understanding the trends and patterns of drug use, especially antibiotics at the hospital level (7). For example, in a study by Hajebi et al In Tehran in 2001 with the aim of investigating the determination of the drug pattern in Taleghani Hospital in Tehran, the cost of antibiotic use as a proportion of the total cost of drugs used is about 19.4% this was a very high difference compared to similar studies in the other (8). 8 years later, Khoshdel et al. conducted a study to determine the pattern of antibiotic use in the pediatric ward of the Hajar hospital in Shahrekord, whose findings showed that 37% of the antibiotics were misplaced and about 20% of the studies Similar to the foreigner was higher (9). Another study done by Berenjeyan and et al in Esfahan in 2016 with the aim

of examining the use of antibiotics before and after surgery in surgical wards showed that antibiotic administration had the lowest degree of similarity to standard after discharge

**Table 1.** Amount of antibiotics used during the six months of 2016 (49.1%)

Antibiotics	Imipenem	Gentamicin	Cefazolin	Ceftriaxone	Ceftazidime	Clindamycin	Metronidazole	Meropenem	Vancomycin
19379	755	398	6915	3104	351	1917	4790	96	1053

and the administration of antibiotics after surgery in accordance with the prescribed time was 56.3% (10). In Iran, antibiotic use is used to control the risk of post-operative infection or to get hospital infections. However, hospital infections can be due to the uncontrolled administration of antibiotics and the rate of these infections can be by washing Hand, environmental health, personal hygiene and proper use of antibiotics (11). Therefore, considering the retrospective follow-up and the trend noted in the studies from 1380 to 2016, and the lack of conformity of the drug administration method with the standard, according to the studies mentioned (8-10), the present study aimed to investigate the antibiotic use in the hospital Yasuj Shahid Beheshti Medical Education was planned in 2017.

## METHOD

This study was a descriptive and analytical study. The data collected from antibiotic use in the surgery department of Yasuj Shahid Beheshti Hospital were collected. During six months, the use of cefazolin, ceftriaxone, clindamycin, ceftazidime, gentamicin, Vancomycin, moropenem, Imipenem clindamycin and metronidazole were randomly assigned to antibiotic culture.

## FINDINGS

Of the total 19379 antibiotics consumed over the course of 6 months, 35% of the total antibiotics used are cefazolin, and then 24% is for metronidazole. Separated from ceftriaxone, clindamycin, vancomycin, Imipenem, ceftazidime and meropenem, the drug was 6 months old. Table 1 shows the exact amount of medications you use.

The antibiotics used in Table 1 were transmitted monthly for antibiotics at monthly intervals of six months, which showed that resistance to ceftriaxone had the highest resistance to antibiotic use. 37 antibiograms were resistant to E. coli and the most resistant bacteria were Escherichia coli, followed by clindamycin, which was resistant to the bacteria epidermius and Staphylococcus aureus from a total of 45 antibiotic bacteria. Table 2 shows the drug resistance to each antibiotic according to an antibiograms.

**Table 2:** Antibiotic resistance and susceptibility to antibiotics in the 6-month period

جمع گل	اکولای		آلیکنس		سیتروباکتر		کلینسیلا		ایندرمیس		آرنوس		سودوموناس		سارپروفیتیکوس		پروتوس		کواکولاز		جمع	
	حساس	مقاوم	حساس	مقاوم	حساس	مقاوم	حساس	مقاوم	حساس	مقاوم	حساس	مقاوم	حساس	مقاوم	حساس	مقاوم	حساس	مقاوم	حساس	مقاوم	حساس	مقاوم
سفالولین	۱	۲	۱						۱												۲	۳
سفتراکسون	۲۵	۲	۳					۱	۴				۱	۱							۴	۲۳
سفتازیدیم	-	-	-													۱		-	-		۱	-
جنتامایسین	۱۵	۲۳	۲	۱			۳	۳		۱۵	۵	۲	۳	۱	۱	۳				۱	۴۸	۳۰
کلیندامایسی ن	۳		۲	۱						۱۱	۱۹	۳	۲			۳					۱۶	۲۹
ونگومایسین				۱								۱	۴			۱					۶	۲

## DISCUSSION AND CONCLUSION

Given the widespread use of antibiotics as well as multiple surgeries around the world every day, physicians use different antibiotics in different conditions to prevent possible infections, but nowadays antibiotics are used in soft tissue surgery. One of the most commonly used hospitals in our country. The use of antibiotics to prevent infection is always a matter of controversy among surgeons, and various results have also been reported, on the one hand, the complications of misuse of antibiotics in different systems of the body or its use restrictions due to drug metabolism, This issue has been discussed and debated (11). In studies by Hong and Lally and Wolfe on the use and non-use of prophylactic antibiotics on the incidence of appendicitis wound infection, it was found that both groups had the same infection rate and 4% (12). Considering the excessive consumption of antibiotics in Iran and the imposition of heavy costs on the health of the baby and the health system, and with the data obtained to date, this study also showed that administration of antibiotics is unnecessary and does not depend on the patient's need. Most cases showed a high percentage of antibiotic resistance, which is consistent with other previous studies. Therefore, it is necessary to prevent antibiotics from irrational use by educating both the health system and the people.

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Ceftazidime	-	-	-													1						1
Ciprofloxacin	46	15	3	1	2		4	8	18	12	2	3	3	3	4	4	1	2			83	48
Gentamicin	15	23	2	1			3	2	5	15	2	3	1	1		3	1		1		30	48
Clindamycin	3		2	1					19	11	2	3			3						29	16
Vancomycin				1						4	1				1						2	6

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