



# Matching Rate of Antibiotic Prophylaxis with National Protocols in Orthopedic and General Surgery Wards of Tertiary Teaching Hospitals In Yazd (2020-2021 AD)

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## ABSTRACT

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**Introduction:** Post-surgery wound infections are among the most common hospital-acquired infections. These infections can be prevented through appropriate antibiotic prophylaxis when the correct principles are followed. Conversely, prescribing antibiotics indiscriminately and based on incorrect guidelines can result in adverse effects for both patient and society, such as extended hospitalization. In Iran, as in other countries, there is a protocol for antibiotic prophylaxis. Due to conflicting statistics, this study aimed to determine whether antibiotic usage adheres to the national protocol in the orthopedic and general surgery wards of different Hospitals in Yazd Province.

**Methods and Materials:** In this analytical cross-sectional study, the population consisted of patients who underwent orthopedic and general surgeries in Sadoughi, Rahneemoon, and Afshar Hospitals between 2020-2021 AD. The inclusion criteria required participants to be 18 years of age and to have an indication for antibiotic prophylaxis prior to surgery. We selected patients using simple random sampling ( $d = 0.05$ ). After administering an antibiotic questionnaire to each patient, we compared their antibiotic usage with the national protocol. Finally, we analyzed our data using SPSS version 22.

**Results:** Within two years, 200 patients were studied. In a study involving 175 patients, 87.5% had prescribing indications that aligned with the national protocol. The type of antibiotics prescribed matched the protocol in 92 patients (46%), while antibiotic dosage also adhered to the guidelines in 92 patients (46%). Additionally, the prophylaxis duration was consistent with the national standards in 110 patients (55%). The highest compliance for prescribing indications was observed at Rahneemoon Hospital, with a match rate of 91.3%. In contrast, Sadoughi Hospital demonstrated the best alignment for antibiotic type (49.6%), antibiotic dosage (49.6%), and prophylaxis time (65.4%). Furthermore, the orthopedic ward exhibited the highest compliance rates for prescribing indications (92.2%), antibiotic type (88.2%), antibiotic dosage (88.2%), and prophylaxis time (62.7%).

**Conclusion and Discussion:** This study demonstrated a strong correlation between antibiotic prophylaxis practices in our hospitals and the national protocol. However, the degree of adherence varied depending on the specific ward and hospital. In many cases, the number of antibiotics prescribed for each surgical procedure exceeded the recommendations outlined in the protocol. To address this issue, certain measures are necessary for reform. Given the contradictory findings in other studies and the limitations of our own research, we recommend further studies to enhance the data on antibiotic usage across various hospitals, ultimately aiming to optimize antibiotic prescribing practices.

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