



Dhulikhel Hospital
www.dhulikhelhospital.org

SO RT IT
Improving health systems through research

Summary brief

September 2021

Good compliance with surgical antibiotic prophylaxis, but more to be done, in a referral hospital in Nepal

Key Messages

- In a surgical department of an academic hospital in Nepal, we found an encouragingly high level of compliance (75%) to surgical antibiotic prophylaxis (SAP) administration with the National Antibiotic Treatment Guidelines (NATG). But the remaining gap is still problematic.
- Half of patients (64/128) not eligible for SAP received the initial dose. This indicates irrational prescription of antibiotics and increased risk for antibiotic resistance. The Hospital Management Committee needs to establish antibiotic stewardship program with focus on compliance to SAP guidelines, as well as a hospital-level protocol based on the NATG.
- The NATG lacks specification on choice and dosage of antibiotics for SAP. The AMR Multisectoral Steering Committee (AMR MSC) should support further research on SAP compliance in other settings in Nepal, and advocate for the revision of the NATG with Curative Services Department (CSD), Division of Health Services (DoHS) in Ministry of Health and Population (MoHP).

What is the problem and why is it important?

Adherence to SAP treatment guidelines has the potential to decrease surgical infection-related costs, hospital length of stay, overall antibiotic use, and the risk of emergence of antibiotic resistant bacteria. Where as, non-compliance to SAP treatment guidelines can increase patient morbidity and puts the patients in higher risk for surgical site infections (SSIs). This, not only increases risk for side effects but might also be a key factor in promoting antimicrobial resistance.

The aim of this study was to assess compliance with the NATG for administration of SAP in patients who underwent surgery in the Department of General Surgery at Dhulikhel Hospital in Kavre, Nepal.

¹Reference: Shrestha, S., Hann, K., Kyaw, K.W.Y., Koju, P., Khogali, M. (2021). Surgical antibiotic prophylaxis administration practices. Public Health Action. AMR PHA Supplement.

e-mail:
sulekhastha@gmail.com

Surgical Antibiotic Prophylaxis (SAP): Eligibility is determined on surgical wound class, comorbidities and prosthesis use. SAP administered at time of induction of anesthesia. Redosing may be required for surgeries 2 hours or more.

Surgical site infections (SSIs): infections that occur near or at the incision site and/or deeper underlying tissue spaces and organs within 30 days of a surgical procedure.

75% compliance to SAP guidelines .

National Antibiotic Treatment Guidelines (NATG): developed in 2014, but requires revision on choice and dosage of antibiotics for SAP.

How did we measure it?

This study included all patients who underwent surgery and were admitted in the Department of General Surgery at Dhulikhel Hospital between July and December 2019. Data on age, sex, anatomical site of surgery, comorbidities, and type and duration of surgery were collected from the operating theatre; information on surgical wound class and administration of SAP from medical records; and occurrence of SSI from the SSI surveillance records by trained clinicians. We described the clinical and demographic characteristics of all patients, administration of SAP and occurrence of SSIs.

What did we find?

- Overall compliance with NATG for SAP was 75% in our hospital.
- Of the patients not eligible for SAP, 64/128 (50%) patients received the initial dose and, of those who were eligible for redosing, 141/164 (86%) of them did not receive redosing.
- Of those eligible for the initial dose of SAP, 708 (99%) patients received it and all patients (100%) received them at the correct time.
- Of the 846 patients included in the analysis, 23 (3%) patients developed SSI.
- The NATG lacks specification on the choice and dosage of antibiotics for SAP.

Implications

- While results show an encouragingly high level of compliance compared to previous report from Nepal, gaps in compliance still need to be addressed by the Hospital Management Committee of Dhulikhel Hospital.
- Administration of antibiotics for ineligible patients is evidence of irrational use of antibiotics. This increases the risk for development of drug-resistant pathogens and the burden of AMR in Nepal. The Hospital Management committee should establish an antibiotic stewardship program, including a focus on compliance to SAP practices and develop a hospital-based protocol based on the NATG.
- Without clear guidelines on choice and dosage of antibiotic for SAP in NATG, it may lead to variation in clinical practices and this may include inappropriate prescribing. The NATG require an amendment to include such guidance.
- National AMR committee should support further research on SAP compliance in other settings in Nepal and also should advocate for the revision of the NATG with the CSD, DoHS in MoHP.