

# Indications and dosing of gentamicin in a Norwegian hospital, areas for optimization of treatment

Heier K F<sup>1,2</sup>, Milojkovic S<sup>1,2</sup>, Mathiesen L<sup>3</sup>, Haug JB<sup>4</sup>, Andersson Y<sup>2</sup>,  
<sup>1</sup>Hospital Pharmacy Østfold, Kalnes, Norway, <sup>2</sup>Hospital Pharmacies Enterprice, South-Eastern, Norway,  
<sup>3</sup>Institute of pharmacy, University of Oslo, Norway and <sup>4</sup>Østfold Hospital Trust, Department of infection control, Kalnes, Norway

kristin.fladstad.heier@sahf.no

## Background

Gentamicin is a first-choice antibiotic for a variety of hospital infections in Norway.

Personalized dosing and follow-up are important for patient safety to ensure efficacy and avoid side effects.

Dosage recommendations are given by weight, and adjusted body weight should be used in case of overweight.

## Objectives

Investigate whether gentamicin in our hospital was used and dosed according to Norwegian guidelines.

Assess whether the presence of underweight or overweight status posed a risk of incorrect dosing.

## Conclusion

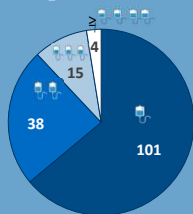
The use of gentamicin was recommended for most treatments and indications.

A substantial portion of gentamicin first doses deviated from the Norwegian guidelines.

Underweight or overweight patients were more often given an inappropriate dosage than normal weight patients.

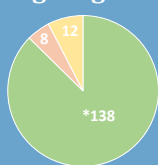
## Results

### Doses per treatment period



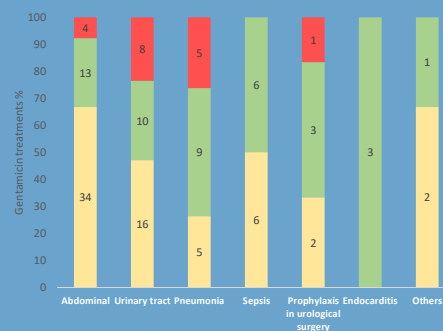
Number of treatments with gentamicin (n=158) divided in number of doses per treatment (1-7).

### Gentamicin according to Norwegian guidelines



\*Number of gentamicin treatments in relation to whether gentamicin was recommended for the indication in the guidelines (n=138, 87%).

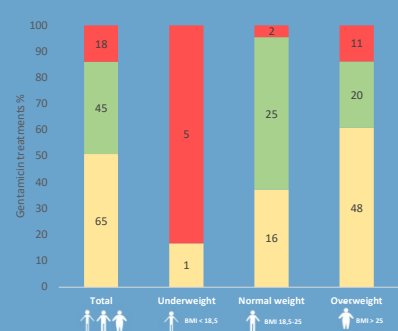
### Gentamicin doses compared to Norwegian guidelines



Gentamicin dosing for treatment and prophylaxis by clinical indication for Gentamicin in Norwegian guidelines (n=138). The first dose per treatment episode with available height and weight is shown as percentages and absolute numbers (n = 128). Ten of the 138 treatment lacked height and/or weight data and were excluded.

■ Below recommended dose ■ Recommended dose ■ Above recommended dose

### Dosing assessment related to weight category



First dose when height and weight was known and gentamicin a drug of choice in guideline (n=128) is illustrated in % and numbers.

■ Below recommended dose ■ Recommended dose ■ Above recommended dose

## Norwegian guidelines

Abdominal	6 mg/kg	Sepsis	6-7 mg/kg
Urinary tract	6 mg/kg	Prophylaxis in urological surgery	4 mg/kg
Pneumonia	6 mg/kg	Endocarditis	3 mg/kg

Gentamicin doses recommended in Norwegian guidelines for antibiotics in hospitals for different indications.

## Material and methods

Retrospective observational study.

Clinical data on gentamicin treatment was extracted together with relevant laboratory data and visualized by Microsoft PowerBI software.

Additional data collected through review of patient's records.

150 patients >18 years, receiving a total of 158 gentamicin treatments over a three-month period in a Norwegian hospital.

