



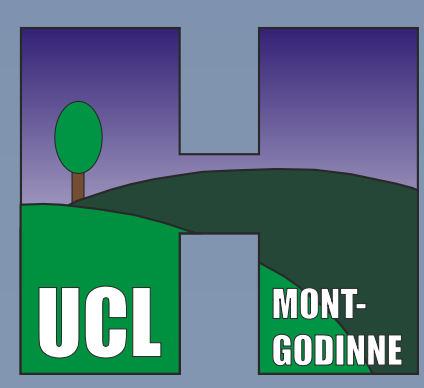
Antibiotic Drug Monitoring Quality Assessed by a Clinical Pharmacist : Observational Study

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Objectives

To assess the quality of Antibiotic Therapeutic Drug Monitoring (TDM) in routine hospital practice and establish baseline status for rationally defining future actions aimed at improving it (by implementation of clinical pharmacy services).

Design

- 4 months prospective observational study with validated data collection form using predefined criteria for TDM quality assessment.
- Descriptive statistics performed with SPSS 13.0 for Windows®.

Setting

Orthopaedic surgery, general surgery, neurosurgery, vascular surgery, haematology and pulmonary wards of a 400 beds teaching hospital, using vancomycin twice daily and amikacin once daily administration schemes.

Main outcome measures

Adherence to predefined criteria for sample timing, information transmission, and follow up of dose adjustment recommendations.

Criteria:

- sampling time: less than +/- 15 min (amikacin) and +/- 30 min (vancomycin) deviation from preset time for peak levels; less than +/- 30 min for trough levels;
- information transmission: patient's full name, dose, schedule of administration, time of previous and current dose, actual time of peak and trough level sampling;
- quality of the analysis [internal and external controls];
- acceptance of dose adjustment (more than 10 %) recommendations.

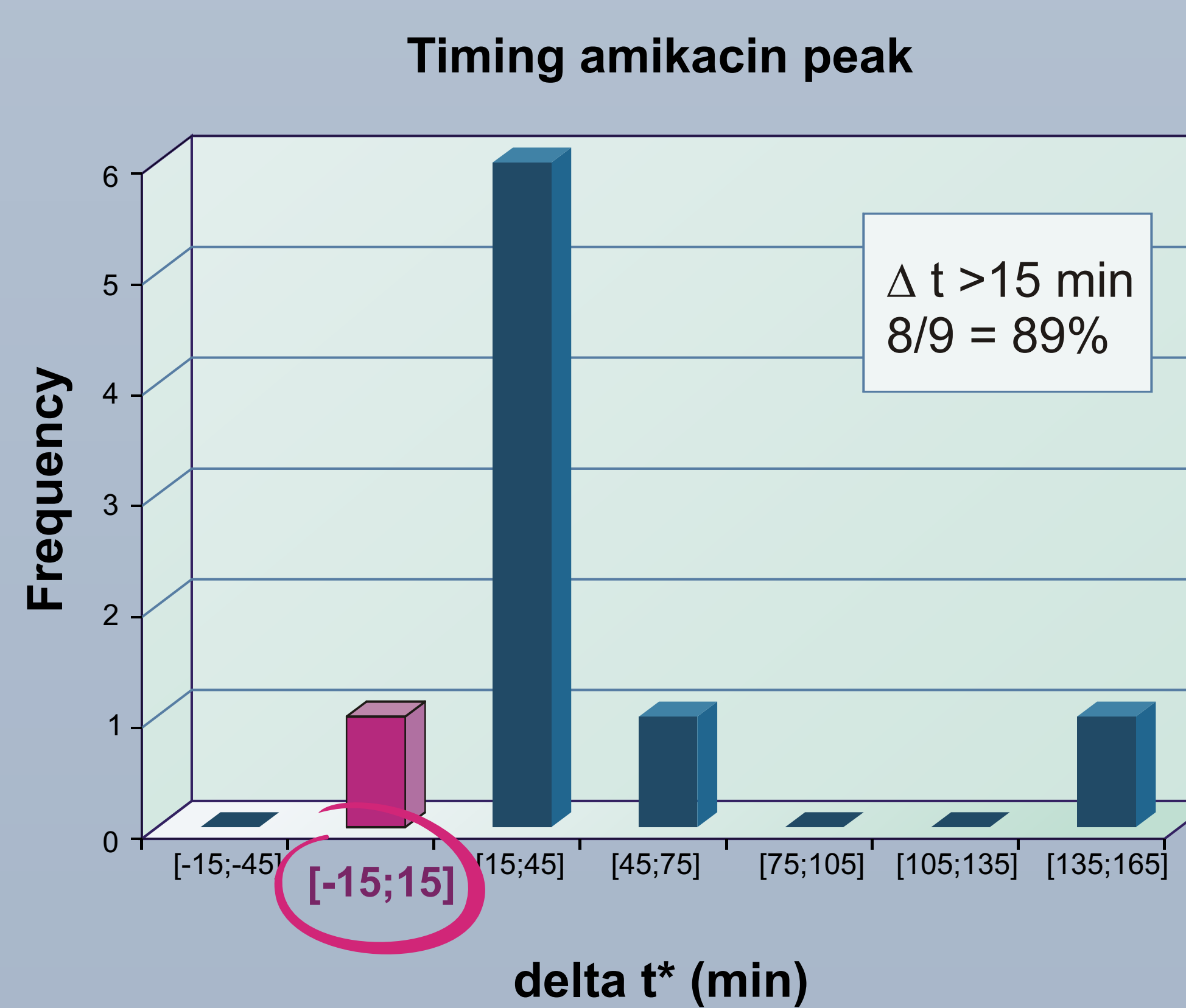
Results

Inclusion:

94 patients (46 vancomycin and 65 amikacin courses).

Correct sampling times -

- peak levels: 39% (n=15) for vancomycin and 11% (n=9) for amikacin,
- trough levels: 63% (n=51) for both antibiotics.

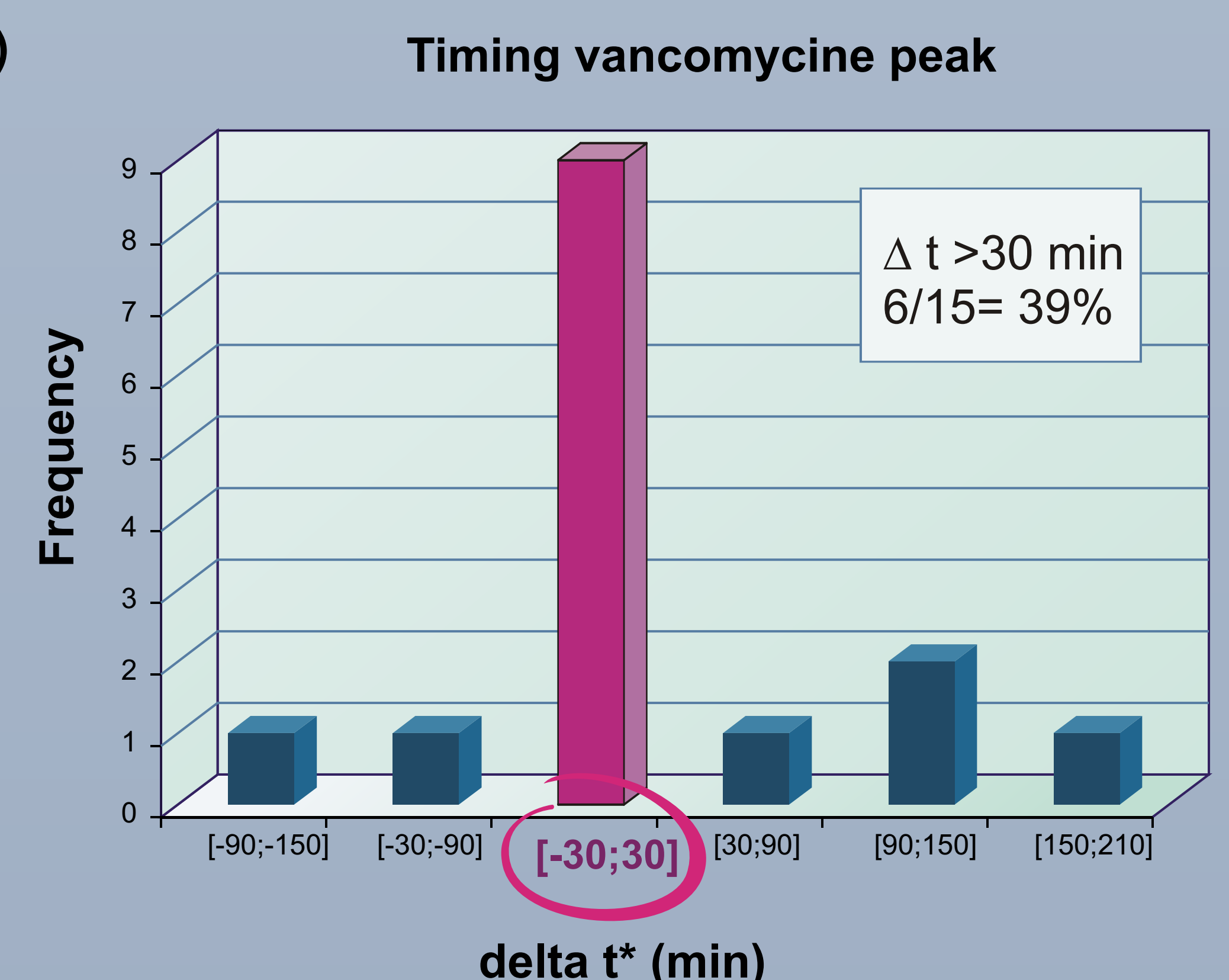


*Time difference between programmed sampling time and observed sampling time

Correct information transmission
55% (n=83)

Quality of the laboratory analyses
No issue noted

Implementation of recommendations
32% (n=66) for vancomycin and 18% (n=17) for amikacin.



Vancomycine

32 % 68 %

Amikacin

18 % 82 %

Conclusions

Incorrect sampling times and deficiencies in communication between the ward and the laboratory are key factors affecting the quality of TDM, leading to dosage adjustment recommendations that are only infrequently implemented.

The companion abstract examines the underlying reasons for such poor performance of the TDM process using a qualitative approach.