INAPPROPRIATE ANTIBIOTIC DOSAGE ADJUSTMENTS IN PATIENTS WITH RENAL IMPAIRMENT: A CROSS-SECTIONAL ANALYSIS

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BACKGROUND AND IMPORTANCE

Adequate dose titration in patients with renal impairment is crucial to avoid adverse effects and to achieve therapeutic goals.

Dose reduction at baseline is not recommended to achieve desired plasma levels and to prevent the development of resistance.

AIM AND OBJECTIVES

- To assess the inadequacy of prescribed antibiotic doses according to renal function
- To identify the medical services involved.

MATERIAL AND METHODS

- Cross-sectional, descriptive study
- Patients > 18 years old with antibiotic prescribed
- Variables: age, sex, prescribing specialty, antibiotic, dose and glomerular filtration rate
- Data collection: Medical history and electronic prescription programme

Prescriptions were reviewed according to the Hospital Antimicrobial’s Guidelines.

RESULTS

227 prescriptions from 200 patients (54% men, mean age 68 years) were reviewed. 9.7% of these prescriptions were not correctly adjusted to glomerular filtration rate.

Antibiotics with inadequate dosage

- Piperacilne/tazobactam (13.6%)
- Amoxicillin/clavulanate (27.3%)
- Meropenem (27.3%)
- Vancomycin (50%)
- Gentamicin (5.1%)

Adjustment required

- Dose adjustment (22.7%)
- Interval modification (27.3%)
- Both (50%)

Prescriptor’s Units

- Internal Medicine
- Digestive Medicine
- Oncology

34/227 prescriptions required dose adjustment due to GFR < 30ml/min

35.3% inappropriately prescribed

52.9% required a first loading dose different from the maintenance doses

88.9% of them was done incorrectly because the filtrate-adjusted dose was prescribed directly

CONCLUSION AND RELEVANCE

A small but not negligible percentage of patients with renal failure do not receive a correct dose.

Training physicians in proper prescribing and optimising the pharmaceutical validation process in these patients is essential to ensure their correct use.

In addition, this study identifies the need to follow a protocol on the correct initial loading doses and the time required for their adjustment.