

LINEZOLID USAGE AND COST ANALYSIS AFTER A HOSPITAL TRANSFER

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BACKGROUND

Linezolid is a broad-spectrum antibiotic active against Gram-positive bacteria and its use must be controlled. The Definite Daily Dose (DDD) is a statistical measure of drug consumption; the assumed average maintenance dose per day for a drug used for its main indication in adults. In June 2014, the hospital was transferred to the new utilities and e-prescribing with clinical decision support systems was implemented.

PURPOSE

To quantify and analyze the use of linezolid and its cost, after a hospital transfer and e-prescribing implementation.

MATERIAL AND METHODS

Observational, retrospective study of linezolid usage from January 2013 to December 2016. We established two study periods: pre-transfer and post-transfer. Oral linezolid (suspension and tablets) and intravenous (IV) doses dispensed were reviewed in Hospitalization Units (HU) and Intensive Care Units (ICU). Data were obtained from Pharmacy Management Application: number of dose dispensed and costs. We determined the number of DDD/100 stays using a linezolid DDD value of 1.2 grams (600mg/12h).

RESULTS

PRE-TRANSFER PERIOD

A total of 6,310 doses were dispensed for HU (mean of 350 per month): 69.27% iv, 30.52% tablets, 0.21% suspension.

In ICU 3,236 units (179 units/month): 92.49%, 7.23% and 0.28%, respectively.

The total cost was 549,954.6€ (30,553.03€/month).

POST-TRANSFER PERIOD

A total of 29,239 doses were dispensed for HU (mean of 974 per month): 36.67% iv, 63.08% tablets, 0.25% suspension.

In ICU 4,931 units (164 per month): 92.94%, 7.00% and 0.06%, respectively.

The total cost of linezolid was 1,968,369.75€ (65,612.33€/month).

The number DDD/100 stays for linezolid:
- In HU was 0.99 (2013), 1.21 (2014), 2.33 (2015) and 2.49 (2016).
- In ICU: 7.73 (2013), 8.1 (2014), 8.1 (2015) and 7.9 (2016).

CONCLUSION

- ❑ After the transfer, linezolid usage has increased (x3) in the HU, remaining stable in the ICU. The number DDD/100 stays confirms these results.
- ❑ In the HU there is an increase in the use of oral versus parenteral linezolid. This may be related to the inclusion of sequential therapy protocols as clinical decision support systems in the computerized provider order entry, after the hospital transfer.
- ❑ DDD/100 stays is a valid and useful indicator to quantify the use of antibiotics and identify usage changes, and it is used frequently in Antimicrobial Stewardship Programs.
- ❑ A deeper analysis is needed to identify the causes of the increase use of linezolid and implement measures to control it.

