ABSTRACT (edited)

Background: LZD is approved (FDA label and Belgian Summary of Product Characteristics [SmPC]) for the treatment of SSTI and pneumococcal pneumonia caused by Gram-positive organisms (VRE and/or MRSA and/or MSSA). IDSA recommendations also position LZD for osteomyelitis and as an alternative for CNS infections and bacteremia (CID 2011; 52: e18–55).

Methods: Observational, retrospective study in 4 Belgian hospital centers (about 4,000 beds) over 1 year (2016). Analysis of medical files (248 treatments) to collect information on (i) patients’ characteristics and treatment modalities, (ii) occurrence, causality, and severity of adverse drug reactions (ADRs), and (iii) concomitant medications (increasing the risk of developing a serotonin syndrome [SS]).

Results: Only 18% of prescriptions matched the indications approved in the US and in Belgium. Only 47% of patients infected by bacteria resistant to first choice drugs were observed with LZD. LZD was used in 31% of patients (compared to 1% for ciprofloxacin), 25% for MRSA and 3% of patients in FDA label was observed in 18/44 cases for patients with in-label indications. 40% of patients with infections affecting organ(s) (e.g., urinary tract infections) were observed with 30/37 (82%) of patients with other indications. Treatment >90 days was only the significant risk factor for DPC (Kaplan-Meier; p≤0.005 [Mann-Whitney]). 8 cases of CNS ADR were reported. Although 40% of patients were prescribed at least 1 drug-increasing risk, 55% was actually observed in only 1 patient.

Conclusion: LZD is mainly used for off-label indications, some of which, however, are in the IDSA recommendations. The high incidence of ADR (41%) as well as the frequent use of co-medications. A prospective study will be started to further identify potential risk factors.

RESULTS

Patients’ data and treatment modalities

Causative-microorganisms (N = 267)

Treatment duration classification (N = 348)

Characteristics of the Blood Platelets Count (BPC) decrease (> 25%)

Introduction & Objectives

The anti-Gram-positive antibiotic linezolid (LZD) has been introduced on the market in 2000 with limited indications. Due to its excellent bioavailability (favoring patient’s dragging) and activity against Gram-positive isolates resistant or less susceptible to first choice drugs (β-lactams, vancomycin …), it is often used in off-label. However, it can also lead to severe adverse drug reactions (ADRs) such as hematological or neurological disorders, or a serotonin syndrome (SS) when associated with other serotonergic drugs.

The objectives of our study were to assess:

- the real use of LZD in Belgian hospital centers,
- the nature, time of onset, and frequency of LZD-induced ADRs

METHODS

- Analysis of medical files from patients treated with linezolid between January 2016 and December 2016 in 4 Belgian Hospitals (3 University hospitals; 1 general hospital).
- Main collected information:
  - key patient’s characteristics (age, sex, weight, renal function)
  - treatment indications (in comparison with approval labels and IDSA guidelines)
  - type and resistance pattern of the reported causative organism(s)
  - adverse drug reaction data (noted against a predefined list based on Belgian [SmPC] and FDA [PI] labels)
- Statistical analysis performed with SPSS version 25.

MAIN MESSAGES

- Linezolid was mainly used off-label if considering the FDA and/or Belgian approved indications, but more often in-label according to IDSA guidelines.
- Hematological (thrombocytopenia, anemia) and other ADRs were observed with a much larger frequency than indicated in the Belgian SmPC or the FDA label, which should encourage closer follow-up of patients treated with LZD.
- Serotonin syndrome was uncommon (<1%), despite the high proportion of patients (40%) to whom a serotonergic drug had been co-prescribed.

REFERENCES