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Linezolid - are we monitoring our patients when they are discharged?

Background

An audit of patients discharged with oral linezolid for more than two weeks was undertaken in 2016 in a large teaching hospital. This showed 25% of patients discharged did not receive weekly full blood count monitoring as per the SPC. The trust switched from vancomycin to linezolid as a first-line treatment for Gram positive infections in 2017 and specific guidance was written on how to prescribe linezolid appropriately. Linezolid is treated as a hospital-only medicine and its use is licensed for four weeks. Due to the risk of myelosuppression, the SPC and the trust guidance states that patients must have a weekly FBC. If patients are discharged this should be followed up by secondary care; however it is difficult to ensure this is being undertaken due to the vast amount of specialties who prescribe it.

Aims

To develop a process to ensure patients are being appropriately monitored when discharged on linezolid.

Process

A process was proposed as described. Though linezolid is a hospital only medicine, primary care agreed to undertake a blood test so that an FBC could be processed. When a patient is discharged, the ward team send a referral to the trust OPAT team, who will follow up these to ensure there are no concerns. If there are concerns, the OPAT team discuss with the referring team, so the patient can be reviewed and therapy switched if needed.

Figure 1: Linezolid Monitoring Form

The Leeds Teaching Hospitals NHS Trust

OPAT Linezolid Monitoring Referral Form

| Patient name: Mickey Mouse | | Referred from: J20 | | |
|-------------------------------|---------------------------------|----------------------------------|------------|---|
| NHS No: 123 456 7890 | | Referring Consultant: Dr Minton | | |
| DOB: 01/01/13 | | Allergies/Intolerances: Reaction | | |
| Address: Disney world | | Penicillin Rash | | |
| LS9 7DW | | GP Contact Details: Dr Goody | | |
| Tel: 0113 2066250 | | Disney world/MC | | |
| Mobile: 07917091195 | | LS9 5DW | | |
| Infection Diagnosis: | | | | |
| Linezolid start date: | | Most recent FBC taken on: | | |
| Linezolid end date: | | Next FBC due: | | |
| FOR OPAT TEAM USE ONLY | | | | |
| Weekly FBC Results | | | | |
| | Location of FBC (Please circle) | Date Due | Date Taken | Result (Please Circle) |
| Week 1: | Inpatient/Outpatient | | | Normal Abnormal (No action needed) Abnormal (Action needed) |
| Week 2: | Inpatient/Outpatient | | | Normal Abnormal (No action needed) Abnormal (Action needed) |
| Week 3: | Inpatient/Outpatient | | | Normal Abnormal (No action needed) Abnormal (Action needed) |

Improvement Strategy

Data will be collected on the process above, so that we can ensure no harm is being caused to patients and the trust guidelines and SPC are being adhered to.

Figure 2: Linezolid Guidelines

Leeds Health Pathways
Primary and Secondary Care Working Together

Search LHP by keyword

Home | Leeds Teaching Hospitals | Referral Information | Clinical Guidelines/Protocols/Procedures | Lab Services | Primary Care | GP Comments

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Linezolid - Department of Microbiology Antimicrobial Prescribing Guidelines
CURRENT ID: 6155 Approved By: Improving Antimicrobial Prescribing Group
Publication: 11/09/2017 Next review: 11/09/2020 Clinical Guideline
View provenance evidence base view visits revision history

This Clinical Guideline is intended for use by healthcare professionals within Leeds unless otherwise stated. For healthcare professionals in other trusts, please ensure that you consult relevant local and national guidance.

Department of Microbiology (Restricted) Antimicrobial Prescribing Guidelines

Linezolid

- Drug information
- Introduction
- Antimicrobial activity
- Dose/Routes of administration
- Therapeutic drug monitoring (checking levels)
- Pharmacokinetics
- Allergy advice
- Key interactions (include BNF black dot)
- Side effects and monitoring required
- Drug indications
- Prophylaxis indications in LTHT
- Treatment indications in LTHT
- Prescribing restriction

This document provides guidelines for healthcare professionals regarding the situations in which it would be appropriate to consider the use of linezolid. This document is supplementary to, and should be used in conjunction with, the summary of product characteristics.

The use of linezolid can be considered within its currently approved LTHT Drugs and Therapeutics Group (DTG) application; other indications will require chairman's action.

DRUG INFORMATION
Introduction

Figure 3: Linezolid Guidelines - Monitoring Section

*See below for information about patients who may require closer monitoring

Side Effects

Myelosuppression
Myelosuppression (including anaemia, leukopenia, pancytopenia and thrombocytopenia) has been reported in patients receiving linezolid. The risk of these effects appears to be related to the duration of treatment.

All patients should have a weekly full blood count whilst receiving linezolid
Patients who may be at greater risk of experiencing blood dyscrasias and therefore may require closer monitoring include:

- elderly patients
- severe renal insufficiency
- pre-existing anaemia,
- granulocytopenia or thrombocytopenia,
- are receiving concomitant medications that may decrease haemoglobin levels, depress blood counts or adversely affect platelet count or function;
- Receive more than 14 days of therapy.

If significant myelosuppression occurs during linezolid therapy, treatment should be stopped unless it is considered absolutely necessary to continue therapy.

Information required on discharge advice note (eDAN) for patients discharged on linezolid

For the clinician responsible for writing the eDAN
If your patient is a Leeds patient and is going to be discharged on >7 days of treatment with linezolid, they require weekly monitoring of their FBC.

- Complete the OPAT linezolid monitoring referral form found via this link: <http://lthweb.leedsth.nhs.uk/sites/infectious-diseases/opat-civas>.
- Print the FBC request forms to give to the patient or carer, who will visit their GP practice for their blood tests.
- Consider contacting the GP via telephone to inform them that the patient will be attending their practice within the next week for a blood test.
- The FBCs will be followed up by OPAT who will contact the consultant responsible for the patient's care if there are any concerns with their results.

If your patient is not a Leeds patient and is going to be discharged on >7 days of treatment with linezolid, you will need to contact their GP to ensure they are happy to undertake the blood tests or make alternative arrangements for the patient to attend LTHT for their FBC monitoring.

For pharmacists validating the patient's eDAN
For Leeds patients, ensure that the OPAT linezolid referral form has been sent to the OPAT team and that the relevant number of FBC requests have been printed from ICE.
Please copy and paste the following wording in the 'Actions for GP' section of the eDAN:
"This patient has been discharged on a course of linezolid and therefore requires a weekly full blood count (FBC) until the end of their prescribed course. Please obtain this on the following date(s) (xx/xx/xx). This has already been requested by the discharging doctor on ICE. LTHT take responsibility for reviewing these blood tests and will take necessary action if they are deranged."

For those who are not Leeds patients please ensure an appropriate plan has been put in place for the patient and this is documented in the 'Actions for GP' section of the eDAN.

Results Evidence

In the 2016 audit, half were seen in the diabetic foot clinic, who are used to prescribing this drug and regularly follow up patients so completed the monitoring. 25% of patients did not have a FBC post discharge and the rest did within various clinics. Since the switch to using linezolid first-line, 52 patients were discharged on it for more than two weeks, showing there is an increased need in having a one-stop service for linezolid monitoring.

Future Steps

Establish the process for monitoring of linezolid post discharge and roll out across the trust.

To audit the FBC results to see whether we are causing any harm to patients when prescribing linezolid.