Abstract

Background: Texas Center for Infectious Disease is a hospital that specializes in the treatment of tuberculosis (TB). Fluoroquinolones (FQ) play a vital role in the management of TB. FQ are used in patients with drug-resistant TB, intolerance to first line TB medications, extensive disease, elevated liver function tests (LFT) or a combination of these factors. Reasons for switching from one FQ to another, as well as duration of treatment prior to switching were retrospectively reviewed. Methods: All orders for FQ from January 1, 2012 to December 31, 2016 were reviewed. Data collected included FQ start/stop dates and indication for use. If a switch was made from one FQ to another, the reason for the switch and the duration of treatment prior to switching was collected.

Results: 195 patients had orders for FQ. Indications for use included drug-resistant TB 72 (34.8%), elevated LFT 70 (33.8%), extensive disease 25 (12.4%),isoniazid (INH) or rifampin (RIF) intolerance 22 (10.6%), treatment failure 7 (3.4%), other reasons 5 (2.4%), and drug reaction with eosinophilia and systemic symptoms (DRESS) 4 (1.9%).

There were 69 switches in 51 patients from one FQ to another. 44 (63.8%) from LVF to MOX and 25 (36.2%) from MOX to LVF. The most common reason for switching from LVF to MOX was arthralgias in 28 (63.6%) and from MOX to LVF were elevated LFT in 8 (32%) and gastrointestinal intolerance in 7 (28%).

The mean duration of treatment prior to switch from LVF to MOX was 70.3 days and from MOX to LVF was 61.3 days.

Introduction

FQ play an important role in the treatment of TB. Treatment with later generation FQ (LVF and MOX) significantly improves treatment outcomes in adults with drug-resistant-TB and MDR-TB. They are the most important component of the core MDR-TB regimen.

Other indications for FQ use in our patient population include intolerance to first line TB medications, extensive TB disease, elevated LFT or a combination of these factors. LVF is more widely available than MOX, which is more expensive although a reduction in its price is expected in coming years.

The decision for initial use of MOX vs. LVF in TB is based on a variety of factors including susceptibility profile, pre-existing medical conditions such as arthralgias, QT prolongation, chronic kidney disease, hepatic disease and the need for penetration into extra-pulmonary sites.

The reasons for switching and the duration of time prior to switching from one FQ to another in patients with TB has not been studied previously.

Discussion

There were a variety of indications for FQ use in TB patients at Texas Center for Infectious Disease.

About 1 in 4 patients were switched during treatment from one FQ to another.

LVF was on average tolerated for a longer duration of time than MOX prior to switch.

However, LVF was switched to MOX more frequently than MOX was switched to LVF.

FQ are used widely in non TB infectious diseases but the duration of use is usually for day to weeks.

There may be differences in the side effect profiles of FQ when used over prolonged durations of time for TB than when used for shorter periods of time.

It is also unclear if the dose of FQ and the combination of medications used in the TB regimen has an impact on the duration of time prior to switch and the reason for switch.

Underlying comorbidities may also impact the occurrence of FQ related adverse effects which were not examined in this study.

Conclusion

FQ play a vital role in the management of patients with TB.

Switching from one FQ to another was common practice at our hospital and allowed our patients to remain on a FQ for more time than they may have otherwise.

References