Case Report

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Thoracic-region pain upon initiation and withdrawal of lumacaftor-ivacaftor: a report of 3 patient cases

Abstract

Lumacaftor-Ivacaftor (LI) is indicated for the treatment of Cystic Fibrosis (CF) in patients age 12 years and older who are homozygous for the F508del mutation in the CFTR gene. LI discontinuation has been associated with the development of new thoracic-region pain (TRP) in some CF patients. Recognition of this adverse effect can change the approach used to manage CF patients who stop LI. The goal of this case study is to describe case features of patients experiencing TRP upon withdrawal of LI and to share strategy for mitigating the severity/occurrence of TRP in these patients. Three patients were reviewed who had to discontinue LI. All three patients experienced pain and discomfort following discontinuation of the medication. CF providers should be aware of these adverse effects and should educate patients accordingly. Also, intensification of airway clearance in patients requiring withdrawal of LI may theoretically lessen the risk of thoracic pain.

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Abbreviations: LI, lumacaftor-ivacaftor; CF, cystic fibrosis; TRP, thoracic-region pain; ACT, airway clearance techniques

Introduction

Lumacaftor-Ivacaftor (LI) is indicated for the treatment of Cystic Fibrosis (CF) in patients age 12 years and older who are homozygous for the F508del mutation in the CFTR gene. LI initiation has been associated with the development of new thoracic-region pain (TRP) in some CF patients (ORKAMBI (Lumacaftor-Ivacaftor).[1] At our CF Center, TRP has also occurred following the discontinuation of LI. Recognition of this adverse effect has influenced our approach to the management of CF patients who stop LI.

Aims

To describe 1) Case features of patients experiencing TRP upon withdrawal of LI. 2) Our Center's strategy for mitigating the severity/occurrence of TRP in these patients.

Discussion

The TRAFFIC and TRANSPORT study groups demonstrated the majority of mild to moderate adverse events related to LI were dyspnea and chest tightness. These adverse events typically started within 1-2 days of LI initiation and resolved after 1-2 weeks.[2] Currently less appreciated is the potential for TRP upon LI withdrawal. Our patients (Table 1) gave varied descriptions for the character of their post-LI-discontinuation pain. Pain location, however, was consistently in the lower back and in 2 of the 3 cases occurred within 12 hours of drug withdrawal. LI decreases the viscosity of airway secretions which allows secretions to pass more easily through the airways. We hypothesize the increased viscosity of secretions seen after LI withdrawal may result in increased airway plugging and distention, potentially leading to increased thoracic pain. In response to the TRP seen upon LI withdrawal, our CF team has adopted an intensified regimen of airway clearance techniques (ACT) for patients requiring withdrawal of LI. Such an approach would theoretically augment clearance of airway secretions prior to increased mucus plugging and distention which may occur with LI withdrawal.

Table 1 Patient-Reported Features of Lumacaftor-Ivacaftor associated Thoracic-Region Pain

Age	Sex	FEV1 % predicted	*Pseudomonas* Colonization	Pain at LI Initiation				Pain at LI Withdrawal			
				Hours to Onset	Location	Severity, Character	Duration	Hours to Onset	Location	Severity, Character	Duration
23	M	23	Yes	~24	back, bilateral flank	4/10, "constant", "sharp", "aching", "throbbing", "increased cough and sputum"	4 days	~ 12	low back, bilateral flank	6/10, "sharp", "aching", "throbbing", "feels like something stuck"	resolved ~ 24 hours after restarting LI
39	M	35	Yes	1-3	low back	1/10, "mild" "increased cough and sputum"	10 days	~12	low back, right flank	9/10, "sharp", "stabbing", "worse with deep breath",	resolved ~ 6 hours after restarting LI
40	F	79	No	~48	upper abdomen	5/10, "sharp", "stabbing", "worse with activity and prolonged sitting"	ongoing	~60	abdomen, low back	4/10, "sharp", "stabbing"	Resolved in 2-4 days despite LI not being restarted

Conclusion

TRP may occur upon both the initiation and withdrawal of LI. CF providers should be aware of this adverse effect and should educate their patients accordingly. Intensification of ACT in patients requiring withdrawal of LI may theoretically lessen the risk of thoracic pain.

Acknowledgments

None.

Conflicts of Interset

None.

References

1. ORKAMBI. *(Lumacaftor-Ivacaftor) [prescribing information]: Boston, MA: Vertex Pharmaceuticals Incorp*. 2015.
2. Wainwright CE, Elborn JS, Ramsey BW, et al. Lumacaftor–Ivacaftor in Patients with Cystic Fibrosis Homozygous for Phe508del CFTR. *N Engl J Med.* 2015;373(3):220–231.

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