Letter to the Editor

The use of nebulised aztreonam lysine (AZLI) in aztreonam hypersensitive patients

P. Whitaker *, C. Etherington, K. Williams, S. Conway, D. Peckham

Regional Adult Cystic Fibrosis Unit, St James's Hospital, Leeds, LS9 7TF, United Kingdom

Received 15 January 2012; accepted 30 January 2012
Available online 16 February 2012

Dear Editor,

To date our experience with nebulised aztreonam lysine (AZLI) has been in patients with cystic fibrosis (CF) who have exhausted all other therapeutic options. These patients have advanced lung disease and required frequent courses of intravenous antibiotics. Unfortunately in patients with CF non-immediate hypersensitivity reactions to beta-lactam antibiotics are common. It has been reported that up to 20% of patients have multiple beta-lactam reactions [1]. At the Regional Adult CF Unit in Leeds around 10% of patients have had a previous hypersensitivity reaction to aztreonam.

We report the use of AZLI in four adult patients with CF and a history of non-immediate reactions to intravenous aztreonam. All patients had advanced lung disease with predicted FEV1 ranging from 17% to 34%. In each case alternative nebulised medication was either not tolerated or ineffective. Patients 1 and 2 had developed maculopapular rashes to intravenous aztreonam. Subsequently Patient 1 failed a desensitisation procedure with identical symptoms. Patient 3 reported severe arthralgia after 5 days of intravenous treatment. These symptoms recurred on subsequent re-exposure. Patient 4 developed a fixed drug eruption to intravenous aztreonam on three occasions.

All patients underwent skin prick testing to ensure no immediate reactivity. Following this a full test dose of AZLI was given under supervision on a general medical ward. All patients were skin prick test negative and all test doses were uneventful with no significant fall in FEV1. Following successful trials all patients continued with full dose AZLI for at least one month. No adverse events were reported during this period.

AZLI is an aerosolized formulation of aztreonam and lysine that has been demonstrated to be well tolerated and leads to reduction in Pseudomonas Aeruginosa density and improvements in FEV1 [2]. Structurally there are no differences between the aztreonam molecule in the nebulised form compared to the intravenous preparation although the intravenous preparation contains arginine rather than lysine. These patients were truly hypersensitive to aztreonam with three out of four reacting again on re-exposure in the recent past. The most likely explanation for our observations is that the inhaled route is less immunogenic than the intravenous route and a threshold is not reached in the peripheral circulation to trigger the hypersensitivity reaction. We feel that in patients with mild non-immediate reactions it is entirely reasonable to have a trial of treatment. In patients who have had anaphylaxis or a severe non-immediate reaction then this approach should be avoided.

References


* Corresponding author. Tel.: +44 1132067170; fax: +44 1132065947. E-mail address: drpaulwhitaker@hotmail.com (P. Whitaker).