The Shrewsbury and Telford Hospital NHS Trust

Risk of post-operative complications from intra-cameral Cefuroxime used during cataract surgery in patients allergic to Penicillin

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INTRODUCTION

Administration of intra-cameral Cefuroxime, a second generation cephalosporin, has been shown to significantly reduce the occurrence of postoperative endophthalmitis by the ESCRS Endophthalmitis Study Group in 2007. This resulted in a shift of routine surgical practice whereby use of Cefuroxime is now standard across the majority of units. Penicillins and Cephalosporins share similar molecular characteristics which can result in allergic cross-reactivity. While the use of Cefuroxime is not contra-indicated in Penicillin allergic patients, it is unclear whether being penicillin-allergic pre-disposes to a higher risk of certain post-operative complications, such as post-operative uveitis or cystoid macular oedema (CMO)

We aimed to determine if the use of intra-cameral Cefuroxime during routine cataract surgery in patients with a known Penicillin allergy poses a greater risk of post-operative complications.

METHODS

The Medisoft audit tool was used to identify patients who were allergic to Penicillin (with a confirmed and documented reaction) undergoing cataract surgery from 1st January 2015 to 1st January 2020 at The Shrewsbury and Telford NHS Trust (SaTH).

Retrospective analysis of the data was carried out to identify if any patients experienced post-operative complications, in particular CMO or uveitis, within a 3 month period post-operatively.

Only cases where intra-cameral Cefuroxime was administered were included. Cases where cataract surgery was combined with another procedure, such as vitrectomy, were excluded.

Table 1

Co-morbidity	Number of eyes
Fuchs endothelial dystrophy	1
Dry AMD	6
Wet AMD	2
Non-proliferative diabetic retinopathy	4
Treated proliferative diabetic retinopathy	3
Previous macular hole repair	1
Previous uveitis	2
Choroidal naevus	1
Amblyopia	2
Narrow angles with peripheral iridotomy	1
Ocular hypertension	1
Previous retinal detachment	1
Pseudoexfoliation	1
Central retinal vein occlusion with macular oedema	1

Table 2

	Complication	Co-morbidity	Outcome
Case 1	**CMO**	**Non-proliferative diabetic retinopathy**	No post-operative complications in the first eye, however developed CMO following surgery to the second eye, managed with Acular and Maxidex.
Case 2	**CMO**	**Diabetic, no retinopathy**	CMO following surgery to the first eye, managed with Acular. For the second eye prophylactic Acular started post-operatively. No occurrence in the second eye.
Case 3	**CMO**	**Previous acute anterior uveitis**	CMO identified and managed with Maxidex and Acular.
Case 4	**CMO**	**Previous acute anterior uveitis**	Given a prophylactic course of Maxidex and Acular post-operatively considering the uveitis history. Macular thickening was noted at 4 week review. Patient was advised to continue the drops for a longer duration until resolution.

RESULTS

9006 patients underwent cataract surgery at SaTH.

28 patients (0.3%) for a total of 41 eyes were confirmed to have a penicillin allergy on their records.

36 eyes were included in the final analysis. Co-morbidities for the eyes included can be found in Table 1 –

- 1 eye was excluded as it was a combined procedure with subconjunctival gentamicin used.
- 4 eyes were excluded as the type of antibiotic used was not documented.

Only 4 eyes had post-operative CMO. The co-morbidities and outcomes for each eye are shown in Table 2.

There were no reported cases of post-operative uveitis.

Overall, 89% of eyes in patients with a known Penicillin allergy did not develop any post-operative complications following administration of intra-cameral Cefuroxime.

CONCLUSION

Routine use of intra-cameral Cefuroxime at the end of cataract surgery does not pose a significant increased risk of post-operative complications in Penicillin allergic patients. Patients who developed CMO had co-morbidities which predisposed them to it, therefore use of cefuroxime in these patients was unlikely to be a contributing factor.