



Therapeutic Class ReviewSM

Ophthalmics – azithromycin 1% ophthalmic solution (AzaSite[®])

September 2007

New Product for Review:

Azithromycin 1% ophthalmic solution (AzaSite[®]) [Inspire]

Dossier Provided by Manufacturer:

Dossier Evaluation: (2)

- 1 - Dossier missing significant clinical trial(s).
- 2 - Mfg. provided all relevant trials; Missing pharmacoeconomics model.
- 3 - Mfg. provided all relevant trials and information.

Available Therapeutic Alternatives:

Preferred/Formulary	Non-Preferred/Non-Formulary
bacitracin ophthalmic ointment [various]	azithromycin 1% ophthalmic solution (AzaSite [®])[Inspire]
bacitracin/polymyxin ointment [various]	ciprofloxacin ophthalmic solution (Ciloxan [®]) [Alcon]
ciprofloxacin ophthalmic solution (Ciloxan [®]) [various]	gatifloxacin ophthalmic solution (Zymar [®])[Allergan]
ciprofloxacin ophthalmic ointment (Ciloxan [®]) [Alcon]	levofloxacin ophthalmic solution (Quixin [®])[Santen]
erythromycin base ophthalmic ointment [various]	moxifloxacin ophthalmic solution (Vigamox [®])[Alcon]
gentamicin ophthalmic solution [various]	
ofloxacin ophthalmic solution (Ocuflax [®])[various]	
sulfacetamide ophthalmic solution [various]	
tobramycin ophthalmic solution [various]	

* Covered with prior authorization

Executive Summary

- Azithromycin 1% ophthalmic solution (AzaSite) was approved by the FDA on April 27, 2007.
- Azithromycin 1% ophthalmic solution (AzaSite) is an antibiotic indicated for the treatment of bacterial conjunctivitis caused by susceptible isolates of the following microorganisms: CDC coryneform group G, *Haemophilus influenzae*, *Staphylococcus aureus*, *Streptococcus mitis* group, and *Streptococcus pneumoniae*.^[1]
- Azithromycin 1% ophthalmic solution (AzaSite) is administered twice daily for the first two days and then once daily for the next five days.^[1]

- Acute bacterial conjunctivitis is an infective condition that is not normally serious and usually recedes spontaneously in approximately one week.^[4]
- Antibiotics speed recovery from conjunctivitis, but the benefits are marginal.^[4]
- The review of trials found that the signs of conjunctivitis went away more quickly in people taking antibiotics. However, the benefits of antibiotic treatment are marginal since conjunctivitis resolves on its own in most cases.^[4]
- Microbiologic eradication does not always correlate with clinical outcome in anti-infective trials.^[1]

Evidence

- There were 2 unpublished randomized control trials that studied azithromycin 1% ophthalmic solution (AzaSite) in 1,428 patients. The trials were of short duration (5 day treatment course). One trial compared azithromycin to its vehicle, and the other trial compared it to tobramycin.
 - Both trials were appraised as not useful for making health care decisions.
 - Both trials had a low incidence of adverse events.
- Considerations in Subpopulations:
 - **Pediatrics:** The safety and effectiveness of azithromycin 1% ophthalmic solution (AzaSite) in pediatric patients below 1 year of age have not been established.
 - **Geriatrics:** No overall differences in safety or effectiveness have been observed between elderly and younger patients.
 - **Gender:** No overall differences in safety or effectiveness have been observed between males and females.
 - **Race, ethnicity:** No overall differences in safety or effectiveness have been observed between racial and ethnic groups.

Product Value

Azithromycin 1% ophthalmic solution (AzaSite) provides another treatment option for patients with bacterial conjunctivitis. This product is more expensive than preferred/formulary alternatives (including a number of generics).

Conclusion

Azithromycin 1% ophthalmic solution (AzaSite) is non-preferred/non-formulary because it does not provide additional clinical value over currently available preferred/formulary alternatives for treatment of bacterial conjunctivitis (which often resolves without treatment in approximately 1 week).

Products

Drug Products	FDA approval ^a	FDA approved indications	Usual Dose/Duration ophthalmic	Cost ^b	Potential Off-label Uses ^d
azithromycin 1% ophthalmic solution (AzaSite [®])	4/2007	bacterial conjunctivitis	<ul style="list-style-type: none"> • 1 drop BID x 2 days then daily • 7 days 	\$66.25	All ophthalmic antibiotic solutions have been used for various eye surgical prophylaxis, blepharitis, keratitis, endophthalmitis, and in neonates.
bacitracin ophthalmic solution	Prior to 1982	superficial ocular infections involving the conjunctiva or cornea	<ul style="list-style-type: none"> • 1-2 drops Q 3 or 4 hours • 7-10 days 	\$0.64	
bacitracin/polymyxin ointment	Prior to 1982	superficial ocular infections, involving the conjunctiva and/or cornea	<ul style="list-style-type: none"> • Apply every 3 or 4 hours • 7-10 days 	\$4.29	
ciprofloxacin ophthalmic solution	12/1990	superficial ocular infections involving the conjunctiva or cornea	<ul style="list-style-type: none"> • 1 or 2 drops Q 2 hours w/a X 2 days then every 4 hours w/a for the next 5 days. 	\$5.29	
ciprofloxacin ophthalmic ointment (Ciloxan [®])	3/1998		<ul style="list-style-type: none"> • tid x 2 days then BID for days 3-7 • 7 days 	\$71.50	
erythromycin base ophthalmic ointment	3/1982	superficial ocular infections involving the conjunctiva or cornea	<ul style="list-style-type: none"> • apply up to 6 times daily 	\$0.49	
gatifloxacin ophthalmic solution (Zymar [®])	3/2003	bacterial conjunctivitis	<ul style="list-style-type: none"> • 1-2 drops Q 2 hr w/a (up to 8 times a day) for the first 2 days, then up to 4 times a day w/a on days 3 through 7 • 7 days 	\$64.60	
gentamicin ophthalmic solution	10/1984	ocular bacterial infections, including conjunctivitis, corneal ulcers, keratitis, keratoconjunctivitis, blepharitis, dacryocystitis blepharoconjunctivitis, and acute meibomianitis	<ul style="list-style-type: none"> • 1-2 drops every 4 hours up to 2 drops once every hour for severe infections 	\$0.29	
levofloxacin ophthalmic solution (Quixin [®])	8/2000	bacterial conjunctivitis	<ul style="list-style-type: none"> • max 8 times/day x 1 days then; days 3-7, 1-2 drops every 4 hr w/a (MAX 4 times/day) • 7 days 	\$62.38	
moxifloxacin ophthalmic solution (Vigamox [®])	4/2003	bacterial conjunctivitis	<ul style="list-style-type: none"> • 1 drop to affected eye(s) 3 times a day for 7 days • 7 days 	\$64.31	
ofloxacin ophthalmic solution (Ocuflox [®])	6/1993	bacterial conjunctivitis & bacterial corneal ulcers	<ul style="list-style-type: none"> • 1-2 drops every 2 to 4 hours on days 1 and 2 then 4 times daily Days 3 through 7 • 7 days 	\$4.75	
sulfacetamide ophthalmic solution	Prior to 1982	bacterial conjunctivitis and other superficial ocular infections	<ul style="list-style-type: none"> • Q 2 to 3 hours initially, frequency is decreased as the condition responds • usual duration is 7 -10 days 	\$0.12	
tobramycin ophthalmic solution	12/1984	external infections of the eye and its adnexa	<ul style="list-style-type: none"> • drops every 4 hours up to 2 drops into the eye(s) hourly for severe infections 	\$0.42	

^a Date applies to approval date for the original brand name medication where there are now generics available.

^b Cost estimate based on AWP (average wholesale price) listed in First Data Bank or MAC (maximum allowable cost) as of August 2007 for 1 course of therapy.

^c Based on patents listed in Orange Book as of 08/08/07.

^d As listed in © 1974 - 2007 Thomson MICROMEDEX database or as referenced.

w/a = while awake

References

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