First-line anti-allergic eyedrops for non-ophthalmologists

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Seasonal and perennial allergic conjunctivitis (SAC/PAC) are the most common and yet the mildest subtypes of allergic eye diseases.[1] Antihistamine, mast cell stabilizer, or a combination of both as a dual-acting agent, are the appropriate first-line therapy. They are easily accessible, either over-the-counter or by prescription. Table 1 summarizes the common eyedrops registered in Hong Kong for mild allergic conjunctivitis and their characteristics.

Current Trend

Topical antihistamines are competitive blockers of one or more of the four histamine receptors (H1-4) found on the conjunctival epithelium. These agents primarily affect the early-phase reaction of allergic conjunctivitis and have a rapid onset (3-15 minutes) but short duration of action. Mast cell stabilizer, on the other hand, targets late-phase responses and can be used as prophylaxis. They have a slow activation (3-5 days). In recent years, dual-acting agents, which provide the immediate relief of antihistamines and the prophylactic benefits of mast cell stabilizer, have overtaken the conventional single-acting agents as the first-line treatment.[2, 3]

Current Evidence

Many randomized trials of variable size and reporting quality were published over the last two decades. The most recent Cochrane systematic review in 2015 identified and analyzed 30 trials with over 4,000 participants focused on the most common anti-allergic eyedrops.[4] When compared with placebo, all reported first-line anti-allergic eyedrops reduced symptoms of SAC/PAC. No serious adverse events related to the use of these agents were reported. However, only short-term effects, ranging from one to eight weeks, were evaluated. There was insufficient evidence to be able to making conclusions regarding superiority between different agents.

Another meta-analysis was published in 2017 on the comparison between olopatadine and other common dual-acting agents. There was no difference in efficacy between olopatadine, ketotifen and epinastine in relieving ocular itch.[5]

Conclusion

Topical antihistamines, mast cell stabilizers and dual-acting agents are overall safe and effective in alleviating symptoms and signs of SAC/PAC in the short term. While there is no definitive evidence to declare superiority in efficacy of one agent over another, exclusive use of a single-acting agent is falling out of favour in practice. Future studies to compare efficacy between different dual-acting agents with standardized outcome reporting would be useful.

References

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Table 1. Common eyedrops for the treatment of mild allergic conjunctivitis registered in Hong Kong[6]

Agent (generic name)	Age indication	Dosing schedule	Remarks
Ocular antihistamines			
Pheniramine 0.3%	≥6 years	QID	Only found in combination with decongestants Over-the-counter
Emedastine 0.05%	≥3 years	QID	
Mast cell stabilizers			
Sodium cromoglycate 2%	≥5 years	QID	Preservative-free preparation available
Pemirolast 0.1%	≥3 years	QID	
Dual-activity agents			
Olopatadine 0.2%	≥2 years	Daily	
Ketotifen 0.025%	≥3 years	BD	Preservative-free preparation available
Epinastine 0.05%	≥3 years	BD	
Azelastine 0.05%	≥3 years	BD	Preservative-free preparation available