Supplementary information

Supplementary table 3. Studies comparing topical antihistamines with placebo.

Reference	Type of trial	Setting	Sample age (years) mean (range)	Time of year	Patient inclusion criteria	Patient exclusion criteria	Active treatment	Length of trial	No. in placebo/ active groups (No. of subjects)	Assessment of subjective symptoms	Subjective assessment (placebo versus active)
Abelson 1994[44]	RCT btn eyes, CPT	Harvard Medical School, Schepens Eye Research Institute, Boston, US	33 (18–63)	Not stated	History of symptoms of clinically active allergic conjunctivitis, positive skin or RAST test for allergic disease, consenting/able adults aged 18–65 years, either sex, any race, a successful challenge inducing at least moderate itching and redness	Bacterial or viral ocular infection, dry-eye syndrome, blepharitis, follicular conjunctivitis, iritis, preauricular lymphadenopathy, pregnant or nursing women, women of childbearing potential using inadequate contraceptive methods, allergy to levocabastine, contact lens wearers, using any type of topical agent (in the last 2 weeks) or systemic medication that might interfere with test parameters, signs and symptoms of allergic conjunctivitis prior to entry into the study	Levocabastine 0.05%	4 hours	47 eyes/ 47 eyes (47)	Graded using standardised scale	Reduced itching $P \leq 0.007$ at 4 hours, hyperaemia $P \leq 0.045$, chemosis $P \leq 0.002$ in active group
Buscaglia 1996[27]	Cross-over RCT, CPT	University of Genoa, Italy	(18–55)	Outside the pollen season	*Parietaria judacia* sensitive subjects with seasonal allergic rhinoconjunctivitis, history of pollen allergy for at least two previous seasons, no symptoms at other times, positive skin prick and RAST test for specific pollen	No other ocular diseases, contact lens wearers, allergy to drugs under study, women of child bearing potential, lactating women. No topical or systemic drugs for at least 1 month prior to study	Levocabastine 0.5 mg/mL	0.5–6 hours	10/10 (10)	Recorded using a graded scale, sum of scores used	Reduced total symptom score $P < 0.002$ after 30 minutes in active group
Donshik 2000[30]	RCT	Multi-centre study, US	36 (14–69)	Jul–Nov 1994	At least 14 years of age, good health, history of seasonal allergic conjunctivitis	Uncontrolled systemic or ocular diseases or illness, known sensitivity to any of the study medications,	Levocabastine hydrochloride 0.05%	6 weeks	75/75 (150)	Patient diary cards	Reduced itching $P < 0.05$ at 1, 3, and 5 weeks, and lid swelling

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					during the ragweed season, skin prick positive to ragweed within the last 2 years, moderate ocular itching	active ocular infection, history of ocular trauma or surgery, pregnancy or nursing status, women of childbearing age not using reliable contraception, involvement in another trial within 30 days prior to the study. Ophthalmic medications and any topical or systemic histamine preparations for at least 5 days prior to the study					at 1 week in active group. Placebo more effective than active at 3 weeks $P = 0.04$, no other difference
Pipkorn 1985[28]	RCT	Sahlgrens Hospital, Göteborg, Sweden	29 (18–47)	May 1984	At least a 2 year history of hay fever during the birch pollen season, with conjunctival and rhinitis symptoms, skin prick positive to birch pollen	Clinical or biochemical evidence of renal, hepatic, gastrointestinal or other disease requiring medication. Patients <16 years, pregnant women, women seeking pregnancy	Levocabastine 0.5 mg/ml	4 weeks	Not stated (37)	Patient diary cards with visual analogue scales	Reduced itching $P<0.05$, runny eyes $P<0.05$, redness $P<0.05$, overall symptoms $P<0.05$ at 4 weeks in active group
Stokes 1993[26]	RCT between eyes, CPT	St Thomas' Hospital, London, UK	43 (23–62)	Not stated	Healthy, non-atopic volunteers	History of perennial allergy, concurrent medication with any topical eye medication, steroids, anti-inflammatory drugs or antihistamines, a history of conjunctivitis within 2 weeks of the study. Keratitis, glaucoma, contact lens wearers, pregnant, nursing women	Levocabastine 0.5 mg/ml	30 minutes	16 eyes/16 eyes (16)	Symptoms scored on a 0–3 scale	Reduced total severity score (redness, swelling, overall) $P = 0.002$ in active group
Zuber 1988[45]	RCT, CPT	Centre Hospitalier Universitaire, Lausanne, Switzerland	30 (12–37)	Jan–Feb	Asymptomatic patients with seasonal rhinoconjunctivitis caused by hypersensitivity to grass pollens, skin prick and RAST test positive to a mixture of grass pollens	Non-seasonal rhinoconjunctivitis, any other eye disease, taking medications, contact lens wearers	Levocabastine 0.5 mg/ml	24 hours	Not stated (11)	Patient questionnaire	Greater conjunctival provocation needed to elicit itching and redness in the placebo group compared with those treated with levocabastine

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Horak 1996[31]	Cross-over RCT, CPT	Vienna, Austria	(20–30)	Outside the pollen season	History of allergic conjunctivitis caused by Dactylis grass pollen with a positive skin prick test, RAST and conjunctival provocation test	Not stated	Azelastine hydrochloride 0.05%	4 hours	24/24 (24)	Patient assessment with a visual analogue scale	24 hours before provocation Reduced itching $P = 0.0007$, in active group
Discepola 1999[46]	Cross-over RCT between eyes, CPT	Not stated	Not stated	Not stated	History of allergic conjunctivitis, positive diagnostic skin test, repeated ocular reaction to weed, grass, or animal dander	Not stated	Emedastine 0.05%	20 minutes	18/18 (18)	Symptoms scored on a 0–4 scale	Reduced itching $P<0.05$ at 3, 10, and 20 mins in the active group
Miller 1975[29]	RCT between eyes, CPT	Kennedy Memorial Hospital, Philadelphia, US	(12–67)	Not stated	History of ragweed pollen sensitivity, with current signs and symptoms of allergic conjunctivitis	Narrow angle glaucoma, known hypersensitivity or idiosyncrasy to drugs under study. Patients receiving corticosteroids within 30 days prior to the study, and those on salicylates or antihistamines (topical or systemic) within 3 days	Antazoline phosphate and naphazoline hydrochloride	24–72 hours	Not stated (Not stated)	Symptoms scored on a 0–3 scale	Reduced inflammation $P<0.01$, photophobia $P<0.05$ in active group

RCT = randomised controlled trial; RAST = radioallergosorbent test; CPT = conjunctival provocation test.