



XXX CONGRESSO NAZIONALE

SIAAIC

Società Italiana di Allergologia,
Asma e Immunologia Clinica



**UPDATE SU ANTISTAMINICI :
EFFICACIA E PROFILI DI TOLLERABILITA'
OLIVIERO ROSSI & GIANENRICO SENNA**

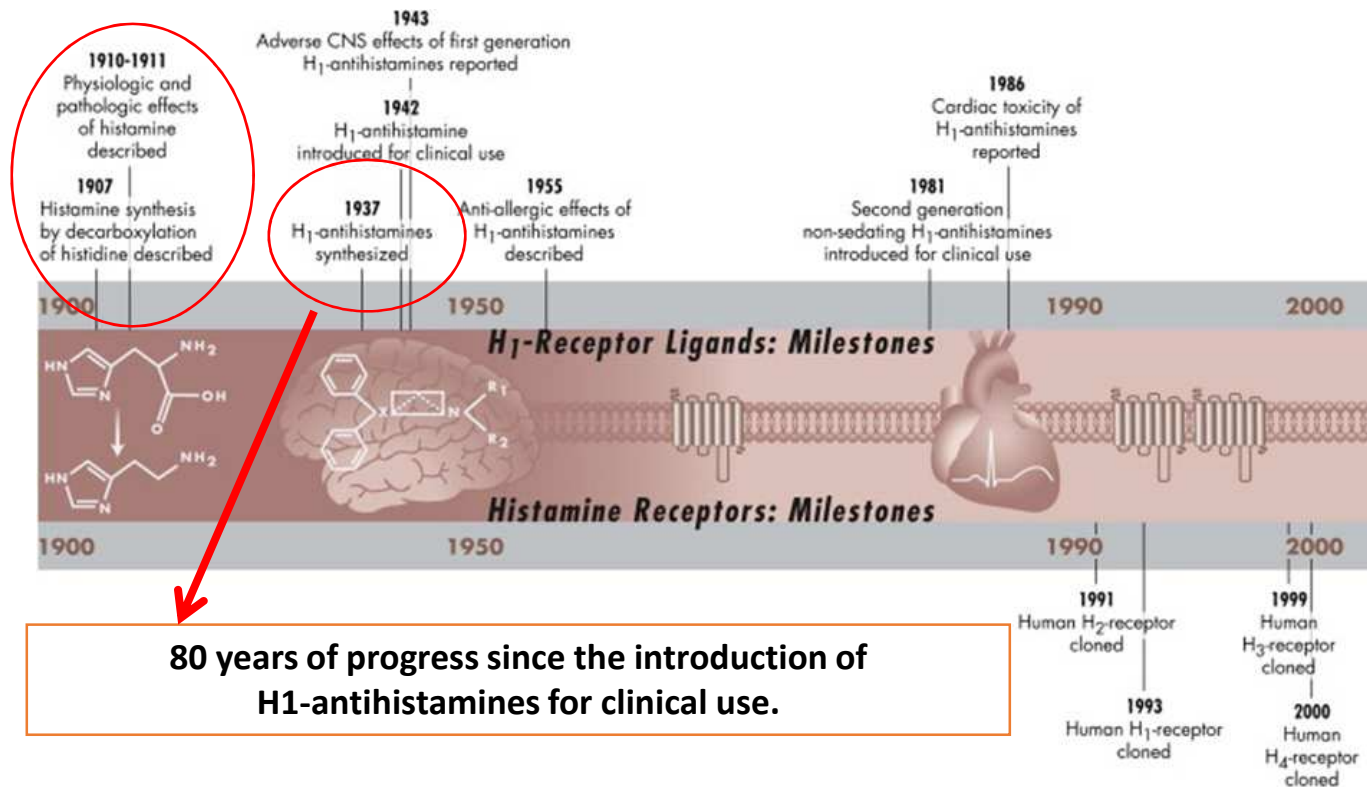


Scienze Mediche Allergologia e Asma



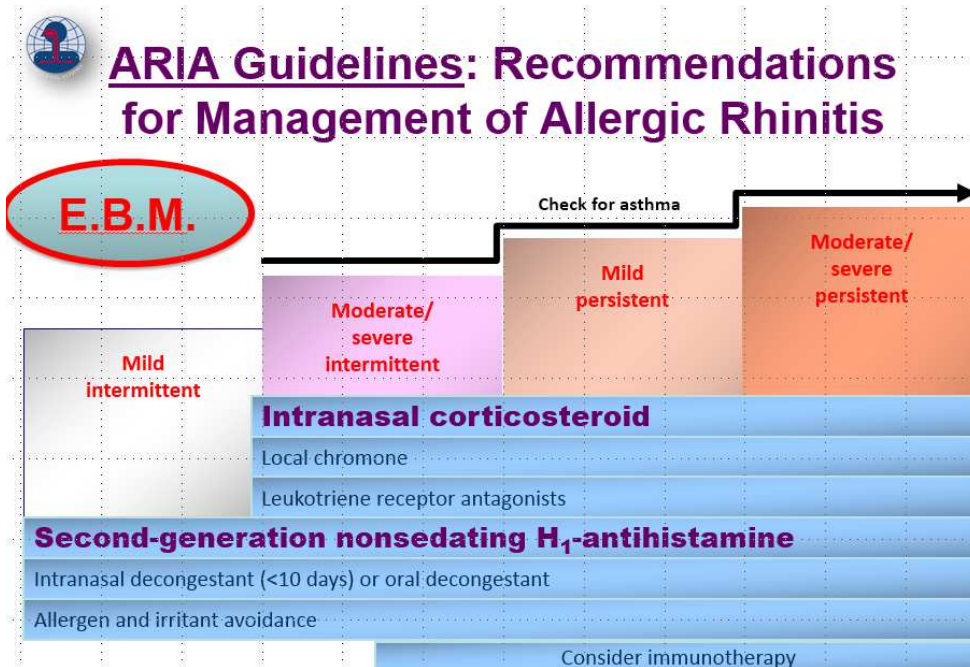
Histamine and H₁-antihistamines: Celebrating a century of progress

F. Estelle R. Simons, MD, FRCPC,^a and Keith J. Simons, PhD^b *Winnipeg, Manitoba, Canada*

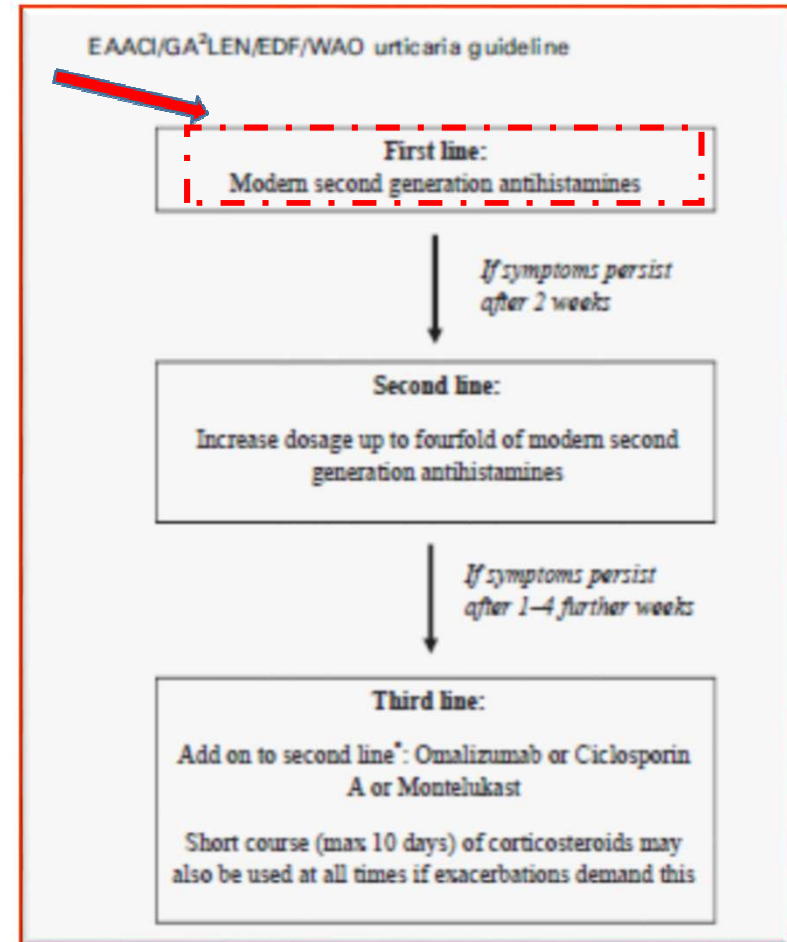


80 years of progress since the introduction of H₁-antihistamines for clinical use.

Gli antistaminici anti-H1 orali di II generazione sono i farmaci di I linea raccomandati dalle Linee Guida per la Rinite allergica e l'Orticaria

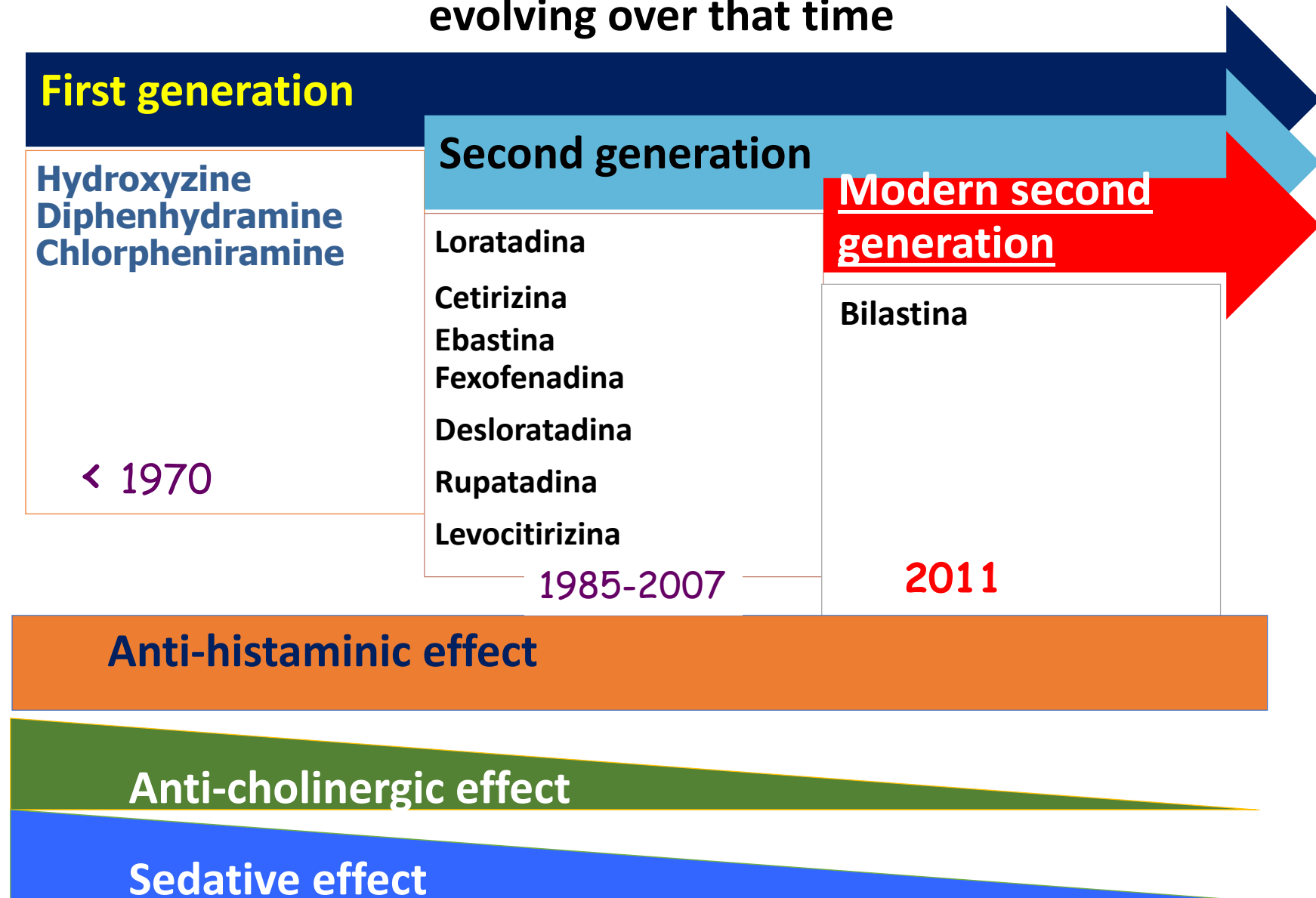


(REVISIONE ANNUALE)



Allergy 2014

Antihistamines have been in clinical use for 80 years
the pharmacological characteristics of these agents have been
evolving over that time



Non tutti gli antistaminici sono uguali



Anti-istaminico ideale

- Blocco completo e selettivo dei recettori H₁
- Efficacia clinica
- Effetto sulla QoL
- Rapida comparsa di effetto terapeutico e lunga durata d'azione
- Nessuno sviluppo di tachifilassi
- Ridotta attività sedativa
- Assenza di effetti anti-colinergici
- Possibilità di utilizzo durante la gravidanza e l'allattamento...

E.A.A.C.I. (European Academy of Allergy and Clinical Immunology)

A.R.I.A. (Allergic Rhinitis and its Impact on Asthma)

Allergy 2008; 63 (Suppl 86):8-16 ; Allergy 2003; 58: 192; Allergy 2006; 61:1086-1096

BILASTINA : AFFINITA' RECETTORIALE

Bilastine has a high specific affinity for the H₁-receptor but it has no or very low affinity for 30 other tested receptors

Legame al recettore H₁ nel cervelletto di cavia

Antagonista anti-H ₁	K _i (nM)
Bilastina	44
Cetirizina	143
Fexofenadina	246

K_i: costante di inibizione, che denota l'affinità di un ligando per un recettore

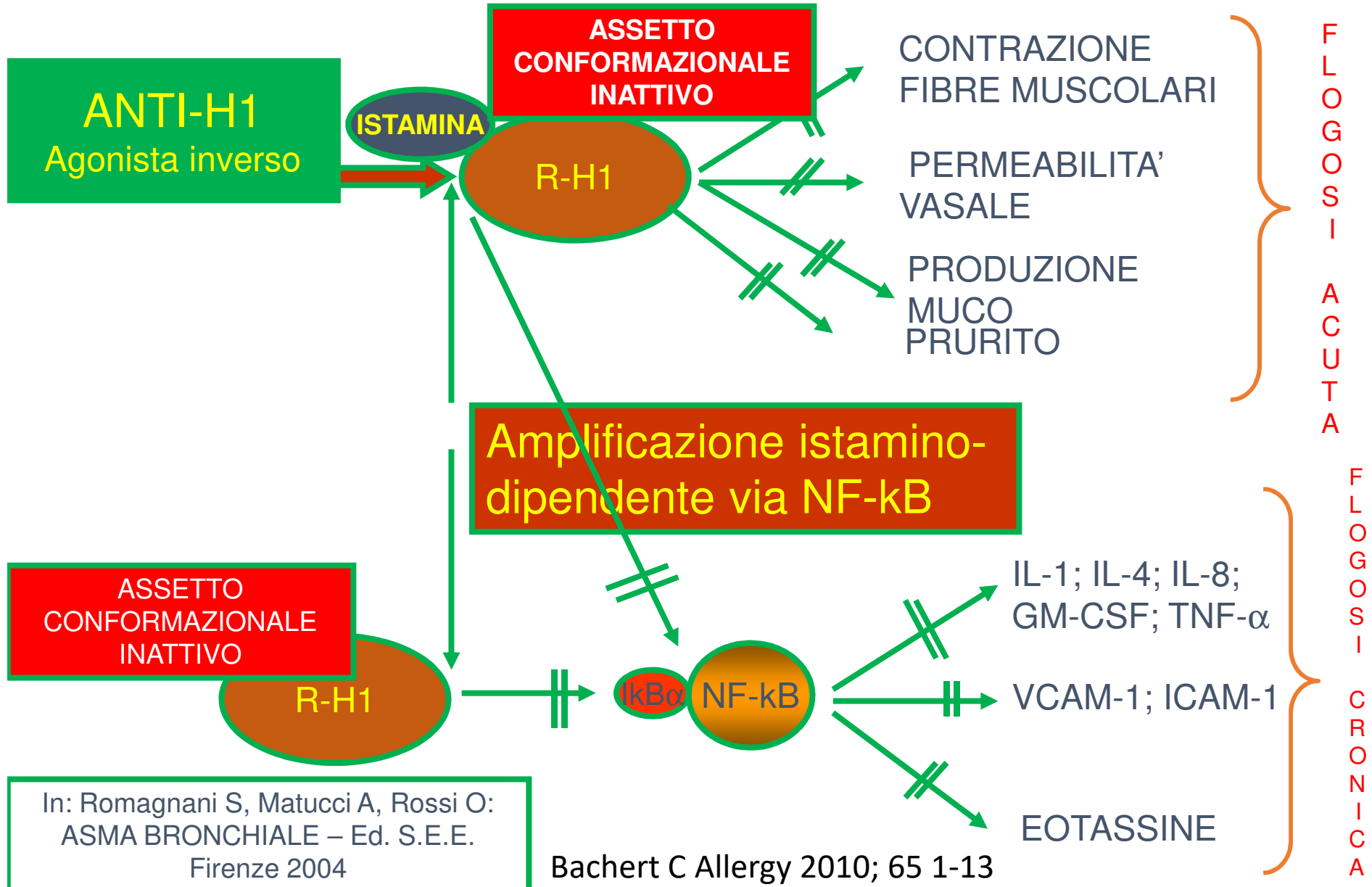
L'affinità di bilastina per il recettore H₁ è rispettivamente 5 e 3 volte maggiore di quella di fexofenadina e cetirizina

Maggiore affinita' recettoriale



Maggiore attività antistaminica ed efficacia clinica

GLI ANTISTAMINICI SONO DEGLI AGONISTI INVERSI E NON DEGLI ANTAGONISTI RECETTORIALI



**GLI ANTISTAMINICI SONO DEGLI AGONISTI INVERSI E
NON DEGLI ANTAGONISTI RECETTORIALI
ATTIVITA' ANTI FLOGISTICA**

**BILASTINE A NOVEL ANTIHISTAMINE THAT PREFERENTIALLY INHIBITS
HISTAMINE AND INTERLEUKIN-4 RELEASE FROM HUMAN MAST CELLS
AND GRANULOCYTES.**

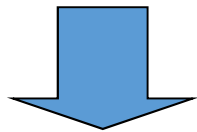
Álvarez-Mon M. Et.al. **Allergy. 2009;64(suppl 90):555.**

Bilastine exerts antiinflammatory actions beyond its antihistaminic effects. Thus, in vitro studies involving a human mast cell line (HMC-1) and peripheral blood granulocytes have shown **bilastine to be able to inhibit** the spontaneous **release of histamine IL-4 and TNF- α** , as well as release induced by different stimuli

Maggiore affinità recettoriale /maggiore attività' antistaminica ed efficacia clinica

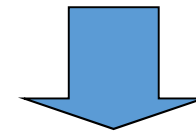
Bilastina agisce direttamente sui recettori H₁ periferici nelle terminazioni nervose e nei piccoli vasi

Rinite allergica



↓starnuti
↓secrezione e prurito nasale
↓ lacrimazione
↓ prurito, eritema ed edema oculari

Orticaria



↓prurito
↓numero, dimensioni e durata dei pomfi e dell'eritema

BILASTINA : NUOVA MOLECOLA ANTISTAMINICA

Critical appraisal of bilastine for the treatment of allergic rhinoconjunctivitis and urticaria

Table 2 Bilastine efficacy determined during clinical investigation

Author	Study design	Primary endpoint	Efficacy
Bachert et al ²⁹	Seasonal allergic rhinitis (n = 721). Randomized, double blind, placebo-controlled, parallel group, 14 days, bilastine 20 mg, desloratadine 5 mg, and placebo	Mean AUC of the reflective TSS from day 0 to day 14, composed of NSS (congestion, rhinorrhea, sneezing, and itch) and NNSS (ocular itching, burning, redness, sensation of foreign body in eye, tearing, and itching of ears and/or palate)	NSD between active treatments but significantly more effective than placebo in reducing AUC-TSS over the entire treatment period, improving the NSS, NNSS, rhinitis-associated discomfort, rhinoconjunctivitis, and quality of life
Kuna et al ³⁰	Seasonal allergic rhinitis (n = 681). Randomized, double blind, placebo-controlled, parallel group, 14 days, bilastine 20 mg, cetirizine 10 mg, and placebo	Mean AUC of the reflective TSS from day 0 to day 14, calculated daily as the sum of four nasal (rhinorrhea, congestion, itching and sneezing) and three nonnasal, ocular symptoms (tearing, redness and itching)	NSD between active treatments but significantly more effective than placebo in reducing AUC-TSS over the entire treatment period
Zuberbier et al ³⁷	Chronic idiopathic urticaria (n = 525). Double-blind, randomized, placebo-controlled, 28 days, bilastine 20 mg, levocetirizine 5 mg, and placebo	TSS was calculated as the sum of scores for pruritus, number of wheals, and the maximum wheal size recorded in the patients' diaries each day, from day 0 to day 28	NSD between active treatments more effective than placebo to improve Dermatology Life Quality Index, general discomfort, and sleep disruption. Treatment with bilastine and levocetirizine reduced instantaneous and reflective TSS in a similar manner
Sastre et al ³¹	Perennial allergic rhinitis (n = 650). Randomized, placebo-controlled, double-blind, parallel-group, 4 weeks, bilastine 20 mg, cetirizine 10 mg, and placebo	Mean AUC of the reflective TSS from day 0 to day 28: total of 6 reflective or instantaneous symptom scores (T6SS) as well as T4NSS (rhinorrhea, nasal itching, sneezing, nasal congestion) and T2OSS (ocular redness, tearing)	Statistically significant differences existed between active treatments and placebo in the mean AUC of T6SS and T4NSS (not in South Africa patients). Bilastine 20 mg, but not cetirizine 10 mg, reached maximum response in a statistically significant shorter time than placebo
Horak et al ³⁰	Asymptomatic patients (n = 75). Double-blind cross-over, allergen-induced symptoms in the Vienna Challenge, single dose, bilastine 20 mg, cetirizine 10 mg, fexofenadine 120 mg	Reflective NSS in patients challenged with allergen for 6 hours	Bilastine and cetirizine had a rapid onset of action, within 1 hour, duration of action greater than 26 hours. Fexofenadine was less effective on day two

Abbreviations: AUC-TSS, the area under curve of total symptom scores; NNSS, nonnasal symptom scores; NSD, no significant differences; NSS, nasal symptom scores; T2OSS, total 2-ocular symptom scores; T4NSS, reflective and instantaneous total 4-nasal symptom scores; T6SS, total 6-symptom scores.

BILASTINA : EFFICACIA CLINICA

BILASTINA vs



CETIRIZINA

FEXOFENADINA



Vienna Challenge Chamber allergen exposure

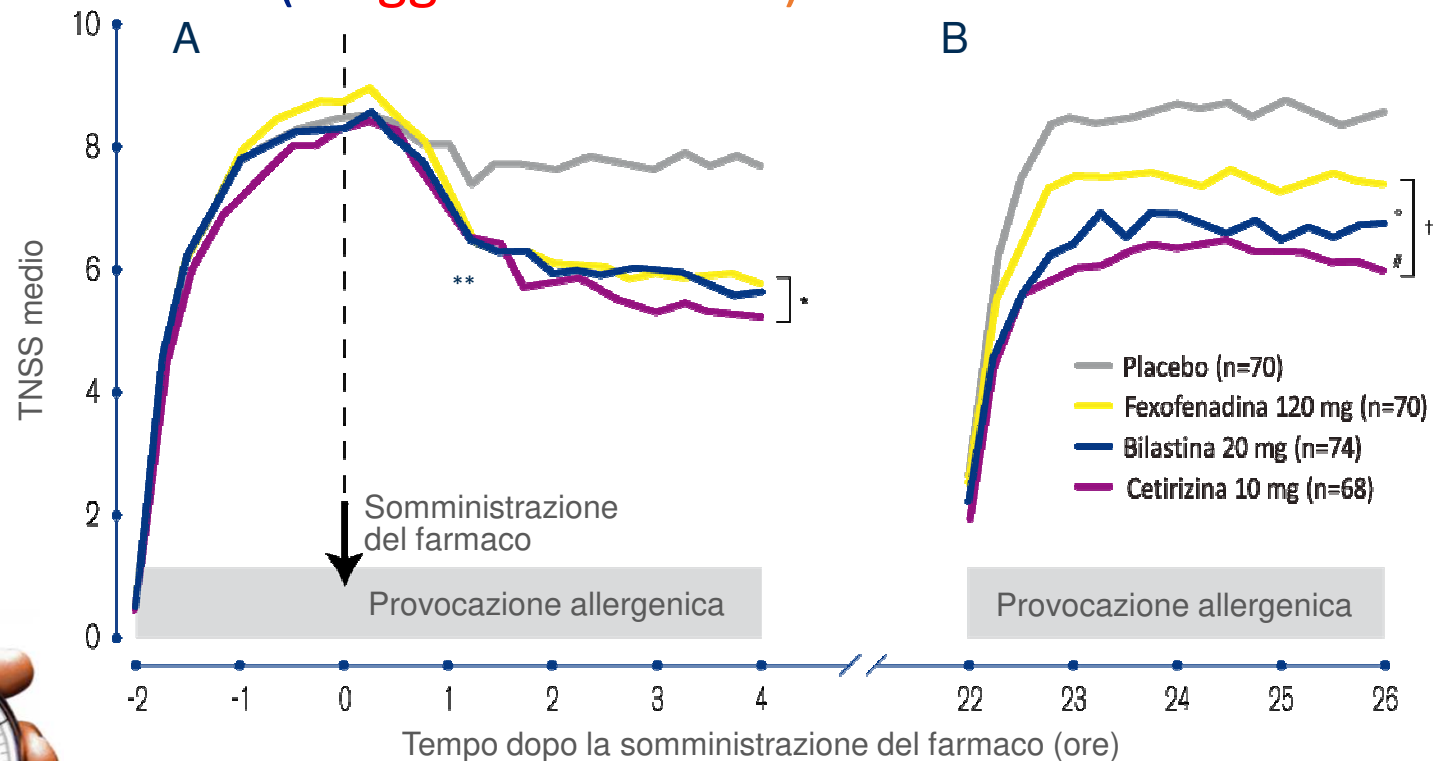
In a comparison performed in the Vienna Challenge Chamber or with natural exposure, **bilastine** proved to be more effective than **fexofenadine** and as effective as **cetirizine** in subjects with grass AR



Horak F, et al. Inflamm Res. 2010;59:391–8.

BILASTINA : RAPIDITA' D'AZIONE

Bilastina 20 mg ha **un'azione rapida (< di 1 ora)** e duratura (**maggiore di 26 ore**) sui sintomi della RAS



* $p < 0,001$ per bilastina, cetirizina e fexofenadina vs. placebo

** $p < 0,05$ bilastina, cetirizina, fexofenadina vs. placebo

† $p < 0,001$ per bilastina, cetirizina e fexofenadina vs. placebo

$p < 0,001$ per cetirizina vs. fexofenadina

° $p = 0,0012$ per bilastina vs. fexofenadina

Andamento nel tempo dell'effetto di **bilastina, cetirizina, fexofenadina** e placebo sull'aumento dello *score* totale dei sintomi nasali (TNSS) indotto da stimolazione allergenica nella VCC (*endpoint primario*)

RAS: Rinite allergica stagionale; TNSS: *Score* totale dei sintomi nasali; VCC: Vienna Challenge Chamber

Horak F. *et al.*; *Inflamm Res* 2010; 59 (5): 391-398

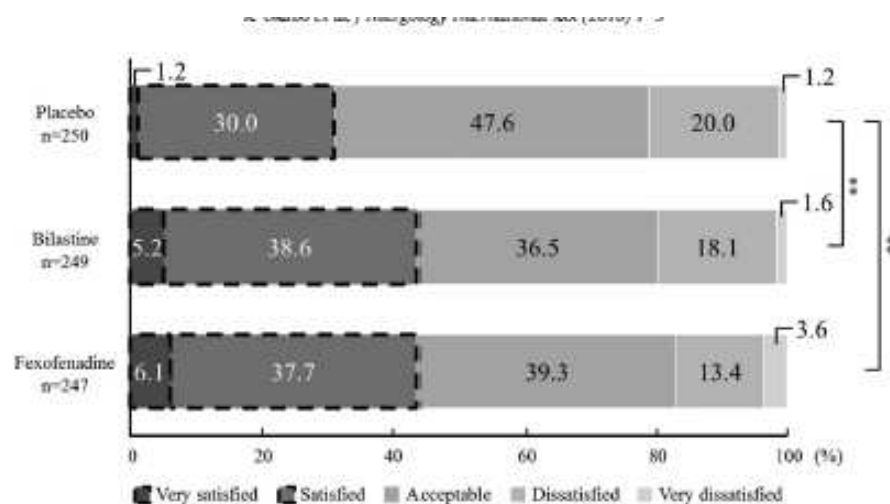
Efficiacia della Bilastina nella rinite allergica perenne



Original article

Efficacy and safety of bilastine in Japanese patients with perennial allergic rhinitis: A multicenter, randomized, double-blind, placebo-controlled, parallel-group phase III study

Kimihiro Okubo ^{a,*}, Minoru Gotoh ^b, Mikiya Asako ^c, Yasuyuki Nomura ^d,
Michinori Togawa ^e, Akihiro Saito ^e, Takayuki Honda ^e, Yoshihiro Ohashi ^f



**BILASTINA Vs
FEXOFENADINA**

.....bilastine showed a rapid onset of action (1 h) and the associated change in TNSS was significantly greater than that of fexofenadine on Day 1.

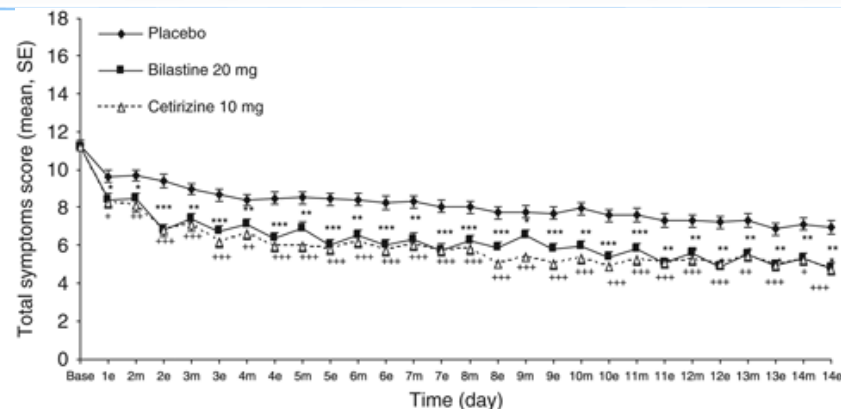
Efficacy and safety of bilastine 20 mg compared with cetirizine 10 mg and placebo for the symptomatic treatment of seasonal allergic rhinitis: a randomized, double-blind, parallel-group study

P. Kuna^{*}, C. Bachert[†], Z. Nowacki[‡], P. van Cauwenberge[†], I. Agache[§], L. Fouquert[¶], A. Roger^{||}, A. Sologuren^{**}, R. Valiente^{**} and The Bilastine International Working Group

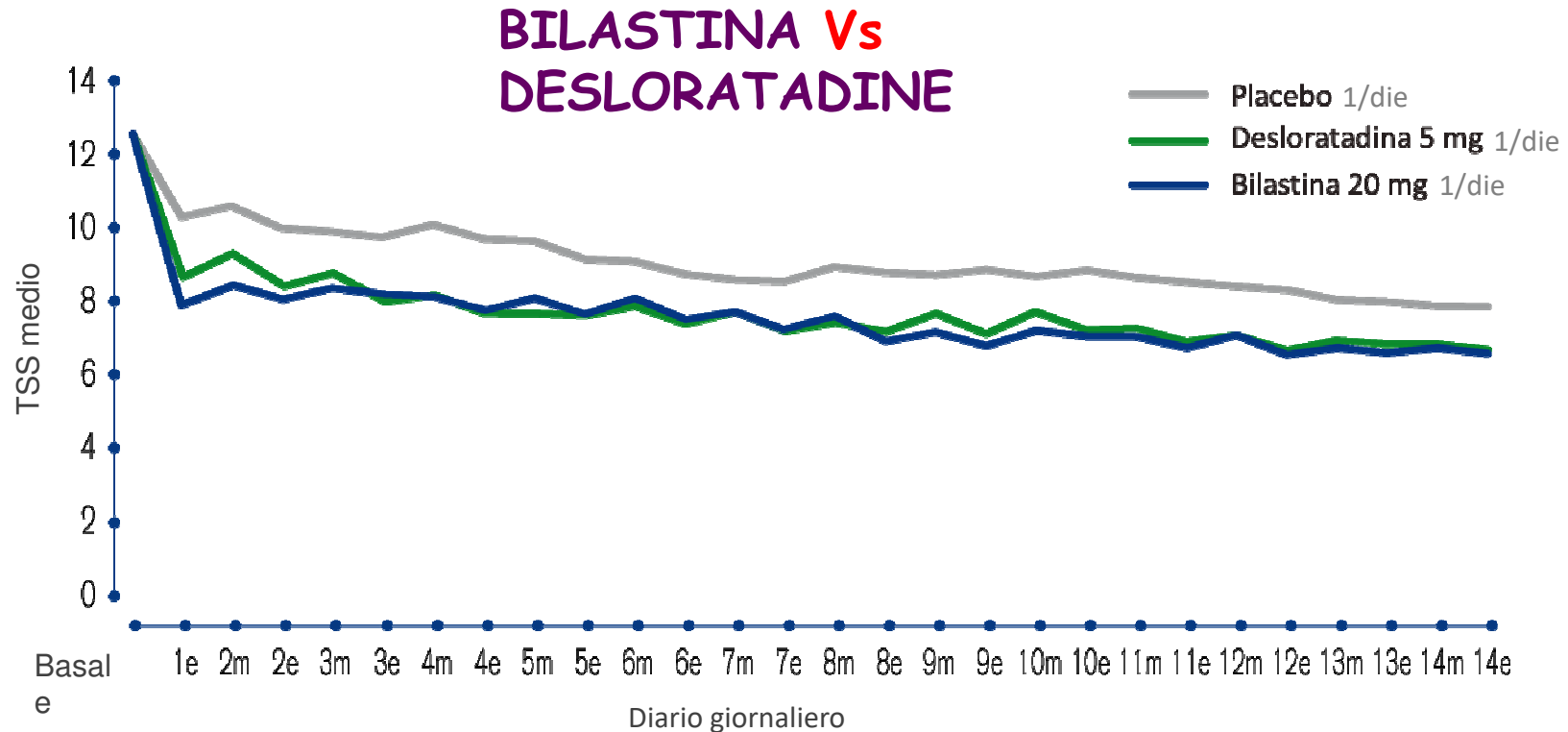
BILASTINA Vs CETERIZINA

Bilastine 20 mg once daily for 2 weeks was significantly more effective than placebo and similar in efficacy to **cetirizine 10 mg** once daily in the symptomatic treatment of SAR.

The finding that **bilastine** significantly **attenuates nasal congestion and ocular symptoms of AR** suggests that this agent may have significant benefits, not commonly observed with some of the other antihistamines used in the management of symptoms of AR.



Bilastina 20 mg/die migliora significativamente i sintomi della RAS, rispetto al basale, durante tutto il trattamento



Effetto del trattamento su TSS medio, registrato due volte al giorno ogni 12 ore, la sera (s) e la mattina (m)

TSS = score dei sintomi nasali (congestione nasale, rinorrea, starnuti, prurito al naso) + score dei sintomi non nasali (prurito oculare, bruciore, arrossamento, sensazione di un corpo estraneo, lacrimazione, prurito alle orecchie e/o al palato)

RAS: Rinite allergica stagionale

Bachert C. *et al.*; Allergy 2009; 64 (1): 158-165

BILASTINA MANTIENE EFFICACIA CLINICA DURANTE 52 SETTIMANE DI TRATTAMENTO

G Model
ANL-2175; No. of Pages 8

ARTICLE IN PRESS

Auris Nasus Larynx xxx (2016) xxx-xxx

Contents lists available at ScienceDirect

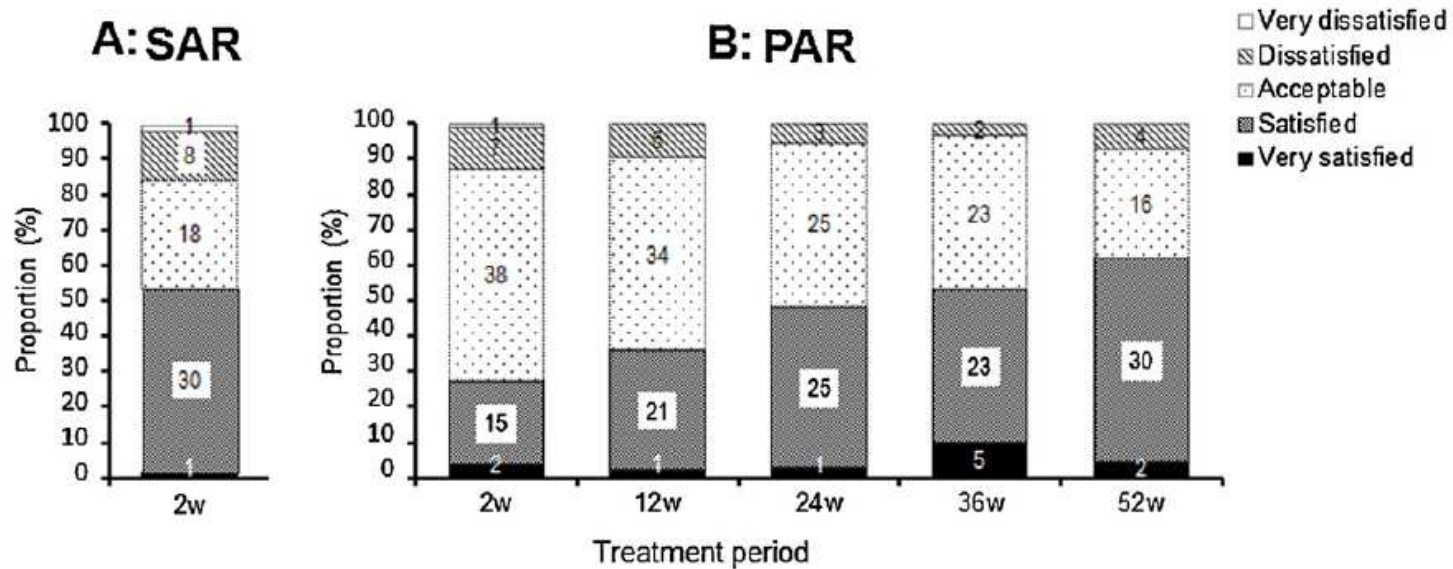
Auris Nasus Larynx

journal homepage: www.elsevier.com/locate/anl



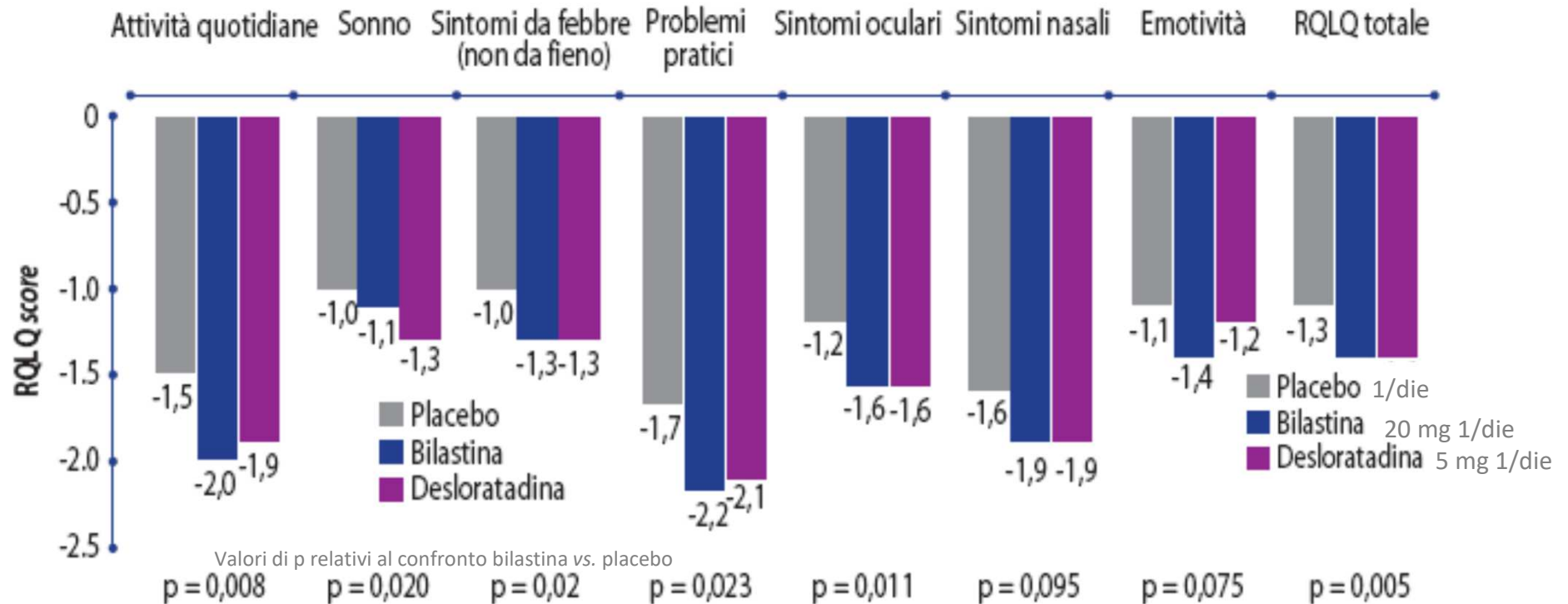

Long-term safety and efficacy of bilastine following up to 12 weeks or 52 weeks of treatment in Japanese patients with allergic rhinitis: Results of an open-label trial

Kimihiko Okubo^{a,*}, Minoru Gotoh^b, Michinori Togawa^c, Akihiro Saito^c, Yoshihiro Ohashi^d



These results suggested that bilastine was effective for patients with SAR and PAR, and the improvement was maintained for the duration of the study with no loss of drug efficacy.

Bilastina 20 mg/die migliora significativamente la qualità di vita dei pazienti con RAS



Effetto del trattamento sugli *score* del questionario per la valutazione della qualità di vita (RQLQ) dopo 14 giorni di terapia
(*endpoint secondario*)

RAS: Rinite allergica stagionale; RQLQ: Questionario sulla qualità di vita per la rinocongintivite

Bachert C. *et al.*; Allergy 2009; 64 (1): 158-165

BILASTINA MANTIENE EFFICACIA ANCHE SULLA QUALITA' DI VITA DURANTE 52 SETTIMANE DI TRATTAMENTO

G Model
ANL-2175; No. of Pages 8

ARTICLE IN PRESS

Auris Nasus Larynx xxx (2016) xxx-xxx

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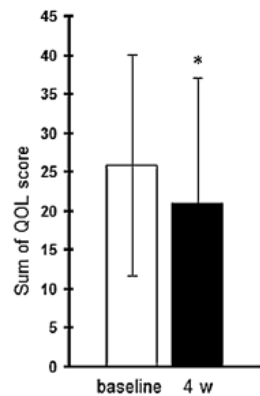
Auris Nasus Larynx

journal homepage: www.elsevier.com/locate/anl

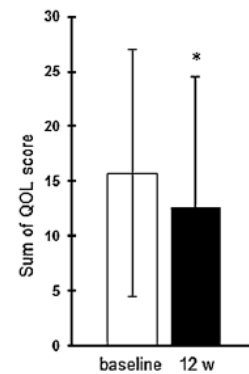
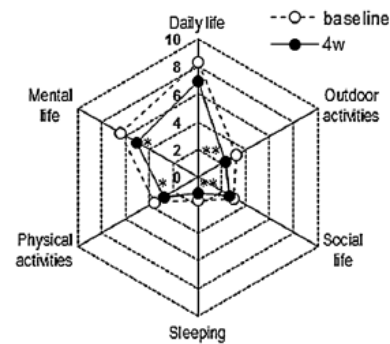



Long-term safety and efficacy of bilastine following up to 12 weeks or 52 weeks of treatment in Japanese patients with allergic rhinitis: Results of an open-label trial

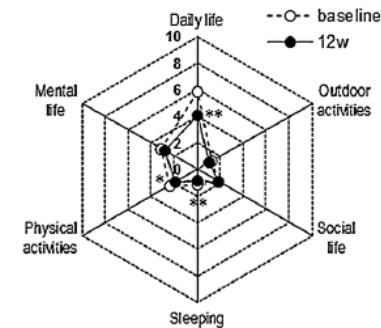
Kimihiko Okubo^{a,*}, Minoru Gotoh^b, Michinori Togawa^c, Akihiro Saito^c, Yoshihiro Ohashi^d



A: SAR

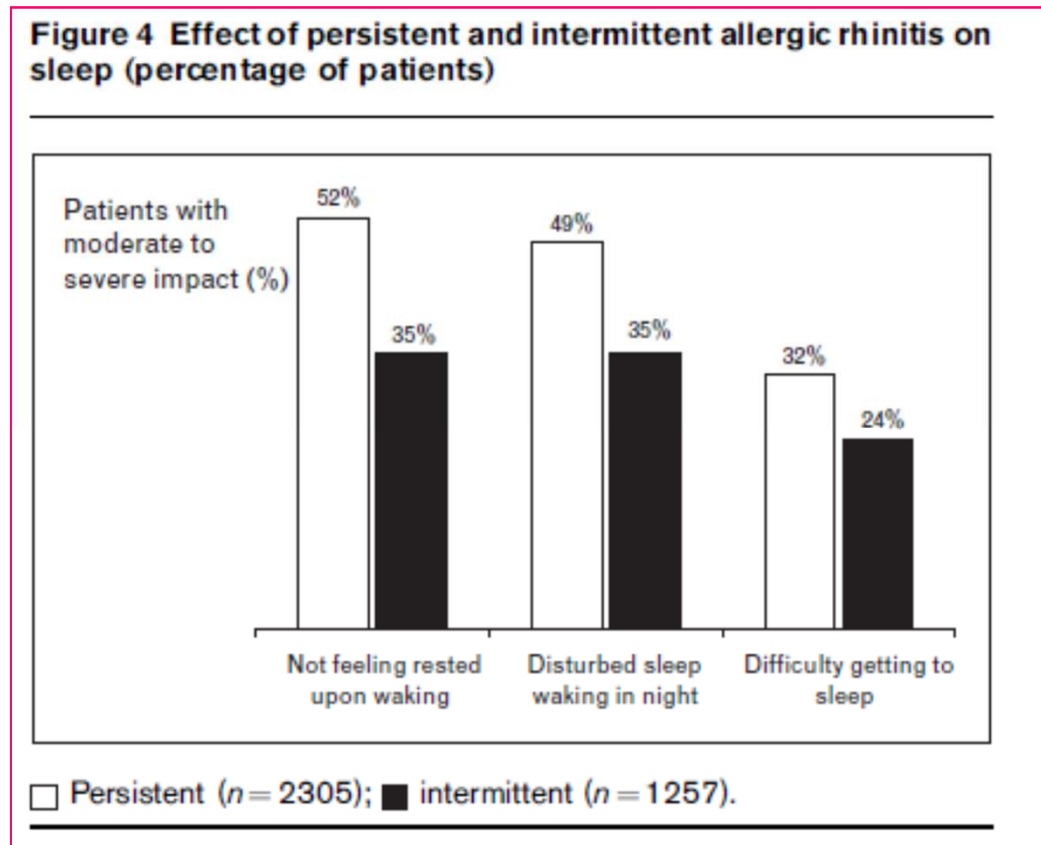


B: PAR



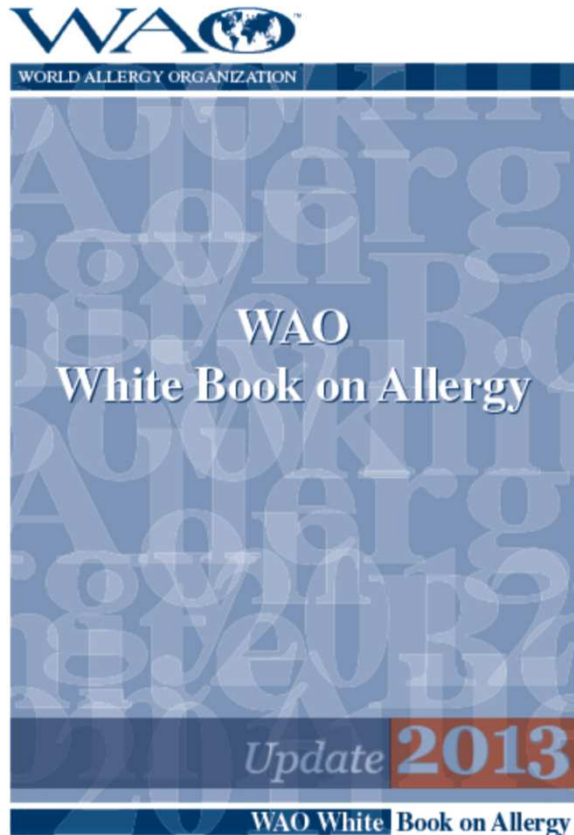
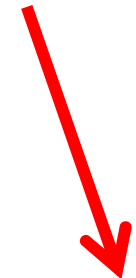
Improvement of QOL was also observed during the 52-week treatment

Rinite allergica : Qualità del sonno “Patient Voice Allergy Survey”



Valovirta E., Myrseth SE, Palkonen S :
“ The voice of the patients: allergic rhinitis is not a trivial disease”,
Curr Opin Allergy Clin Immunol 2008; 8(1): 1-9

L'ostruzione nasale e i disturbi del sonno compromettono la qualità di vita e le performance scolastiche e lavorative



Direct costs	Indirect costs
Physician office visits	Absenteeism
Laboratory tests	Presenteeism (decreased productivity while at work)
Medication	Impaired productivity (52% of patients)
Immunotherapy	
Treatment of co-morbidities	

Effect of Bilastine Upon Nasal Obstruction

I Dávila¹, J Sastre², J Mullaol³, J Montoro⁴, I Jáuregui⁵, M Ferrer⁶,
A del Cuvillo⁷, J Bartra⁸, A Valero⁸

J Investig Allergol Clin Immunol 2011; Vol. 21, Suppl. 3: 2-8

Bilastine

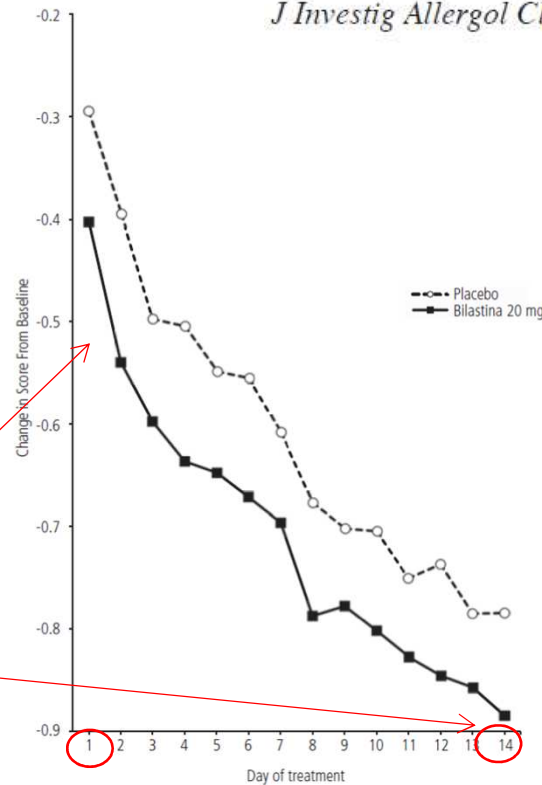


Figure 2. Effect of bilastine upon nasal obstruction during the observation period in the group of patients with seasonal allergic rhinitis. A significant difference versus placebo is observed ($p < 0.05$) from the first day, and persisting for the full 14 days of treatment.

Figure 2. Effect of bilastine upon nasal obstruction during the observation period in the group of patients with seasonal allergic rhinitis. A significant difference versus placebo is observed ($p < 0.05$) from the first day, and persisting for the full 14 days of treatment.

BILASTINA EFFICACIA CLINCA ANCHE SUI SINTOMI OCULARI

ORIGINAL ARTICLE

J. Investig. Allergol. Clin. Immunol. 2011; Vol. 21, Suppl. 3: 24-33

Effect of Bilastine Upon the Ocular Symptoms of Allergic Rhinoconjunctivitis



Table 2. Area under the curve of individual ocular symptoms score over the course of treatment, in patients with seasonal allergic rhinitis.

Symptom	Parameter	Placebo (n=245)	Bilastine 20 mg (n=233)	Desloratadine 5 mg (n=242)	p-value (ANOVA)
		Mean (SD)	Mean (SD)	Mean (SD)	
Ocular itching	AUC	14.2 (10.8)	11.6 (9.6)*	12.0 (9.7)*	p=0.0116
	AUCadj	-10.1 (10.5)	-12.4 (10.2)**	-13.6 (11.1)**	p=0.0012
Tearing	AUC	10.5 (9.8)	8.0 (8.1)**	8.6 (8.4)*	p=0.0048
	AUCadj	-9.2 (10.4)	-11.0 (9.6)	-11.8 (11.5)*	p=0.0277
Conjunctival redness	AUC	10.7 (10.2)	9.0 (8.7)**	8.6 (9.2)**	p=0.0349
	AUCadj	-8.5 (10.5)	-11.2 (10.2)*	-10.7 (10.3)*	p=0.0081

AUC= area under the curve of the symptom score over the course of treatment.

AUCadj= area under the curve of the change from baseline in the score of each symptom.

Pairwise comparisons: *p<0.05 vs placebo; **p<0.01 vs placebo.

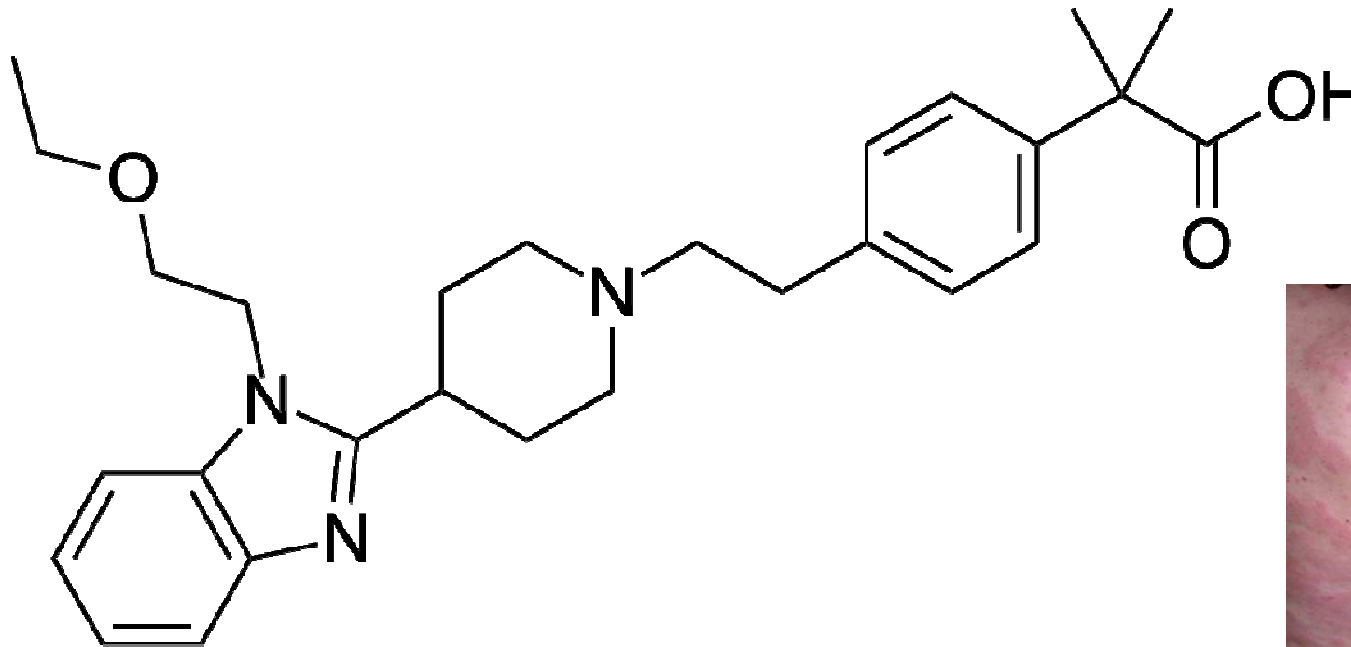
BILASTINA PER IL TRATTAMENTO DELL'ORTICARIA

Drug Evaluation

**EXPERT
OPINION**

Bilastine for the treatment of
urticaria

Jáuregui I et.al. Expert Opinion on Pharmacotherapy Volume 14, 2013 - Issue 11



Allergy EUROPEAN JOURNAL OF ALLERGY AND CLINICAL IMMUNOLOGY

EAACI

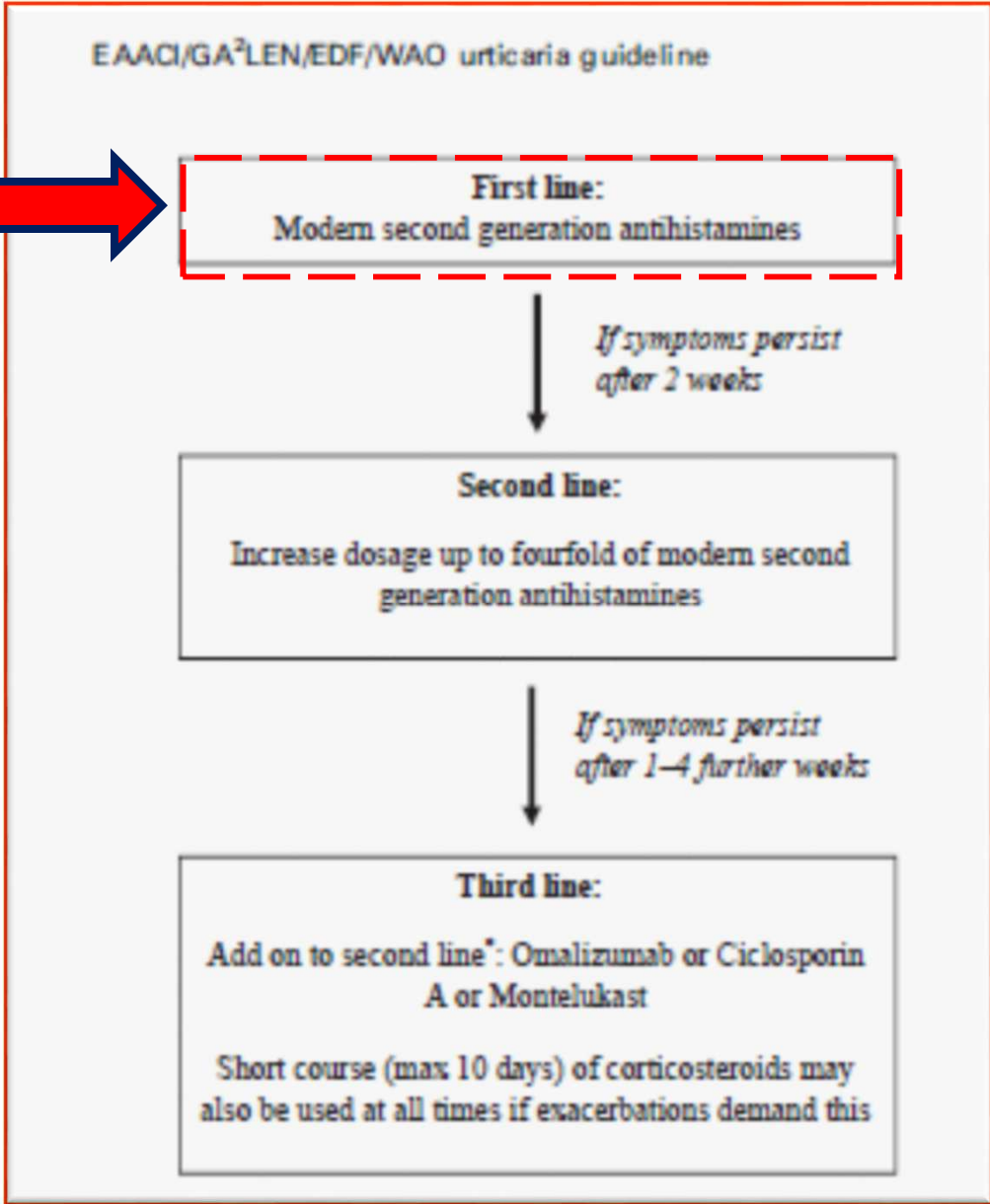
Allegry

POSITION PAPER

The EAACI/GA²LEN/EDF/WAO Guideline for the definition, classification, diagnosis, and management of urticaria: the 2013 revision and update

T. Zuberbier¹, W. Aberer², R. Asero³, C. Bindslev-Jensen⁴, Z. Brzoza⁵, G. W. Canonica⁶, M. K. Church⁷, L. F. Ennsina⁸, A. Giménez-Arnau⁹, K. Godse¹⁰, M. Gonçalo¹¹, C. Grattan¹², J. Hebert¹³, M. Hido¹⁴, A. Kaplan¹⁵, A. Kapp¹⁶, A. H. Abdul Latif¹⁷, P. Mathelier-Fusade¹⁷, M. Metz¹⁸, A. Nast¹⁹, S. S. Saini¹⁸, M. Sánchez-Borges¹⁹, P. Schmid-Grendelmeier²⁰, F. E. R. Simons²¹, P. Staubach²², G. Sussman²³, E. Toubi²⁴, G. A. Vena²⁵, B. Wedi¹⁶, X. J. Zhu²⁶ & M. Maurer¹

ALLERGY 2014



THERAPY: Novel recommendations

Antihistamines

- II generation drugs are preferable
- Drugs should be taken regularly.
- Increase doses up to 4x instead of combining different antihistamines



Are modern second generation H1-antihistamines first line treatment in urticaria and to be preferred against other licensed medication?

We recommend that modern second generation H1-antihistamines are to be used as first line treatment of urticaria (strong recommendation/high level of evidence).



Should modern second generation H1-antihistamines be taken regularly or as needed?

We recommend modern second generation oral H1-antihistamines to be taken continuously in the lowest necessary dose rather than on demand (strong recommendation/high-quality evidence).



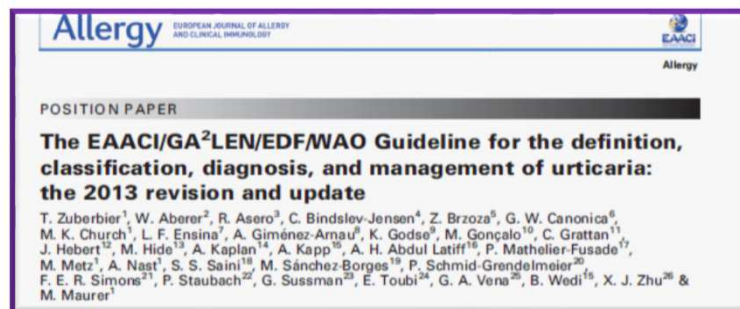
Is an increase in the dose to fourfold of modern second generation H1-antihistamines useful as second line treatment and to be preferred over other treatments in urticaria?

We recommend a trial of up to fourfold dose of modern second generation H1-antihistamines as second-line in the algorithm of treatment.



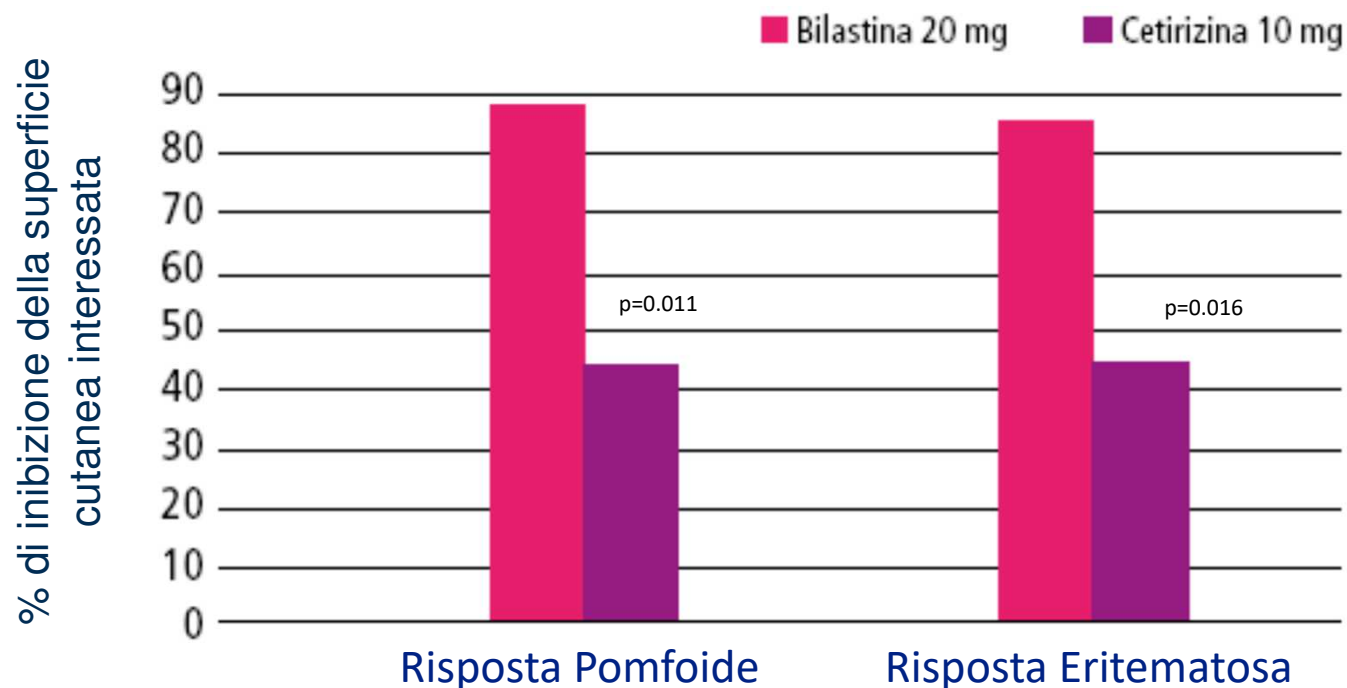
Should different H1-antihistamines be used at the same time?

We recommend preferably to updose modern second generation oral H1-antihistamines that do not cause sedation up to fourfold (strong recommendation/high-quality evidence) instead of combining different H1-antihistamines at the same time (strong recommendation/low-quality evidence).



BILASTINA : Rapidita' d'azione

Bilastina 20 mg (Vs Cetirizina 10 mg) inibisce rapidamente l'area pomfoide e l'area eritematosa in risposta all'istamina



Inibizione % dopo 1,5 h dalla somministrazione di bilastina 20 mg e cetirizina 10 mg

AZIONE RAPIDA

Bilastina vs Cetirizina

BILASTINA : RAPIDITA' D'AZIONE

Comparative efficacy of bilastine, desloratadine and rupatadine in the suppression of wheal and flare response induced by intradermal histamine in healthy volunteers.

Antonijoan R. Et.al. **Curr Med Res Opin. 2016 Oct 21:1-8.**

Onset of action was

- 1 hour for **bilastine**
- 4 hours for **desloratadine** and **rupatadine**



Antonijoan R. Et.al. Curr Med Res Opin. 2016 Oct 21:1-8.

Comparative efficacy of bilastine, desloratadine and rupatadine in the suppression of wheal and flare response induced by intradermal histamine in healthy volunteers.

Antonijuan R. Et.al. **Curr Med Res Opin. 2016 Oct 21:1-8.**

Maximum **wheal inhibition** occurred at **6 hours**

- **bilastine 83%,**
- desloratadine 38%,
- rupatadine 37%



BILASTINA : Rapidita' d'azione



ORIGINAL ARTICLE

SKIN AND EYE DISEASES

Comparison of the efficacy and safety of bilastine 20 mg vs levocetirizine 5 mg for the treatment of chronic idiopathic urticaria: a multi-centre, double-blind, randomized, placebo-controlled study

T. Zuberbier¹, A. Oanta², E. Bogacka³, I. Medina⁴, F. Wesel⁵, P. Uhl⁶, I. Antépara⁷, I. Jáuregui⁷, R. Valiente⁸ & The Bilastine International Working Group^{1,*}

Allergy 65 (2010) 516–528

Bilastina 20 mg vs Levocetirizina 5 mg

Results:

Bilastine reduced patients' mean reflective and instantaneous TSS from baseline to a significantly greater degree than placebo ($P < 0.001$); from day 2 onwards of treatment.

TSS = intensità del prurito + numero di pomfi + massima estensione dei pomfi

Bilastina 20 mg/die è efficace nel trattamento dell'orticaria cronica con azione rapida

ARTICLE IN PRESS

Allergology International xxx (2016) 1–9

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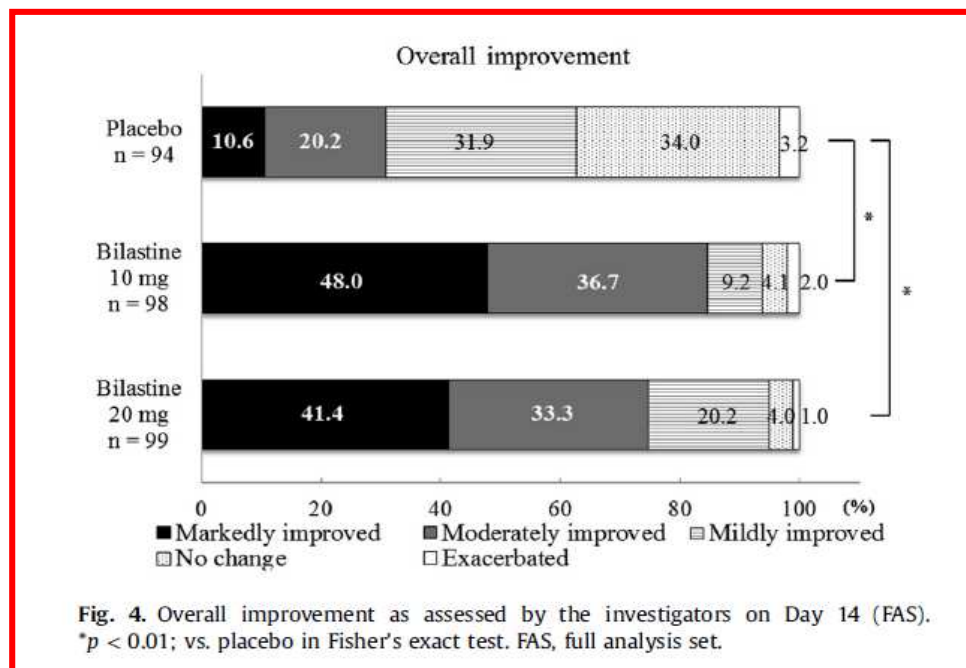
Allergology International

journal homepage: <http://www.elsevier.com/locate/alit>

Original article

Efficacy and safety of bilastine in Japanese patients with chronic spontaneous urticaria: A multicenter, randomized, double-blind, placebo-controlled, parallel-group phase II/III study

Michihiro Hide ^{a,*}, Akiko Yagami ^b, Michinori Togawa ^c, Akihiro Saito ^c, Masutaka Furue ^d



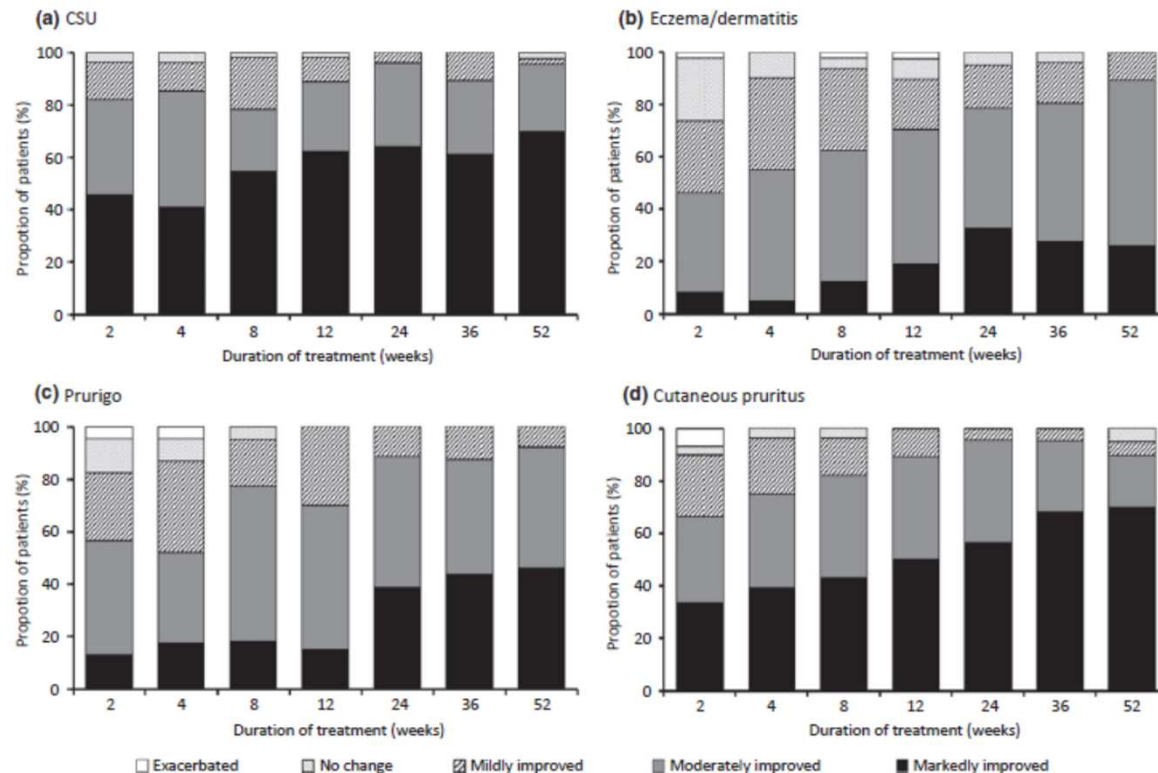
In conclusion, 2-week treatment with bilastine at doses of 20 and 10 mg once a day was effective and tolerable in Japanese patients with CSU. Moreover, the efficacy of bilastine exhibited early onset of action, as evidenced by the relief of CSU symptoms by bilastine treatment at 1 day after the administration

ORIGINAL ARTICLE

One-year safety and efficacy study of bilastine treatment in Japanese patients with chronic spontaneous urticaria or pruritus associated with skin diseases

Akiko YAGAMI,¹ Masutaka FURUE,² Michinori TOGAWA,³ Akihiro SAITO,³ Michihiro HIDE⁴

**ORTICARIA
CRONICA
SPONTANEA**



PRURITO

Bilastine improved CSU or pruritus associated with skin diseases early in the treatment, and the efficacy was maintained throughout the treatment duration, with no loss of drug sensitivity at a regime of 20 mg once daily.

Bilastina 20 mg/die è efficace nel trattamento
del prurito

The impact of itching is underappreciated,
It can have severe effects on quality of life



Bilastine, Blocking the actions of
histamine relieves the itching and reduces
the rash associated with urticaria

Bilastina 20 mg/die è efficace nel trattamento del prurito

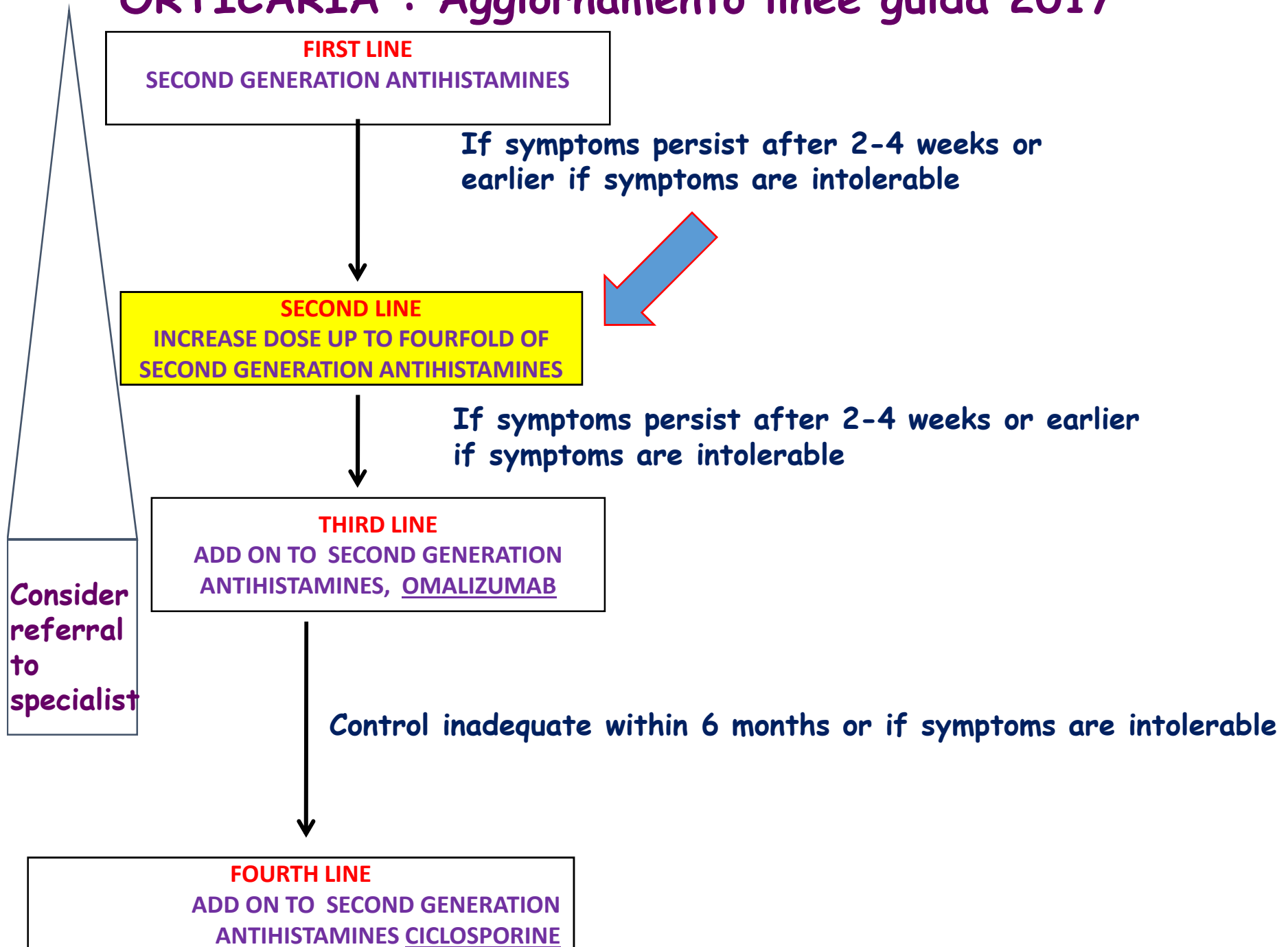
Comparative efficacy of bilastine, desloratadine and rupatadine in the suppression of wheal and flare response induced by intradermal histamine in healthy volunteers.

Antonijuan R. Et.al. **Curr Med Res Opin. 2016 Oct 21:1-8.**

Bilastine was significantly better than desloratadine (2-12 hours; at least $p < .05$) and rupatadine (2-9 hours; at least $p < .01$) for **reducing itching sensation.**



ORTICARIA : Aggiornamento linee guida 2017



TRATTAMENTO ORTICARIA CRONICA : UP-DOSING TO FOURFOLD

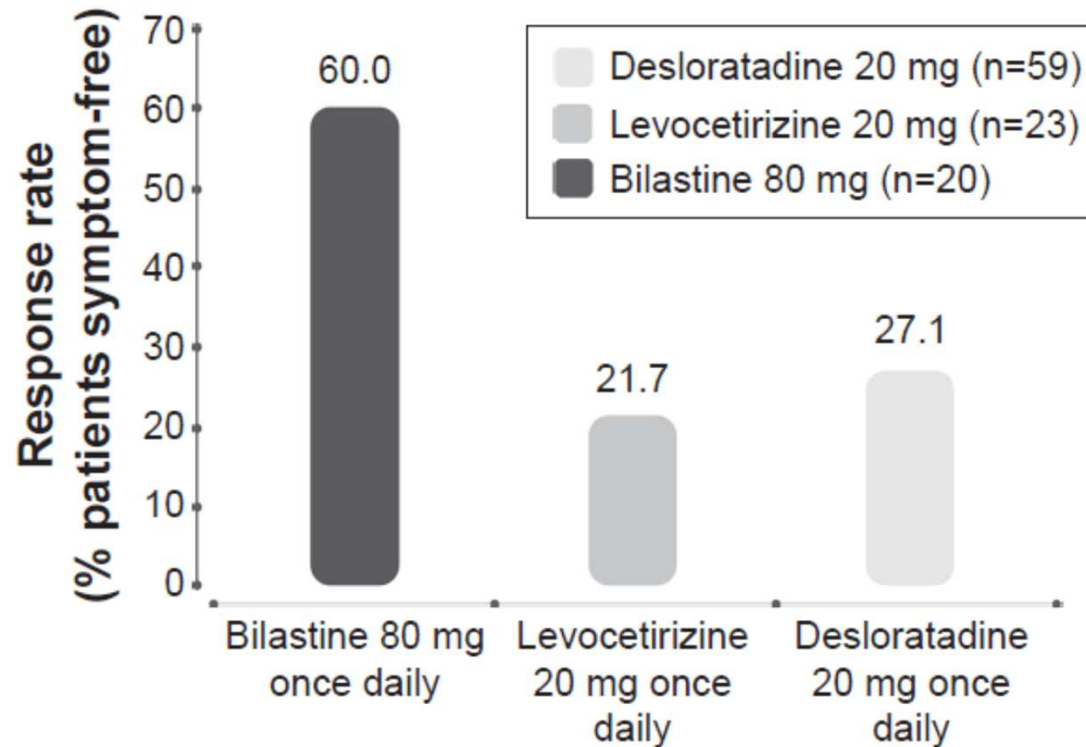


Figure 9 Efficacy of increased dosages of second-generation antihistamines in chronic urticaria.

Note: Adapted from Sanchez-Borges M, Ansotegui I, Jimenez JM, Rojo MI, Serrano C, Yañez A. Comparative efficacy of non-sedating antihistamine up dosing in patients with chronic urticaria. *World Allergy Organ J.* 2014;7:33.²²

ORIGINAL ARTICLE

SKIN AND EYE DISEASES

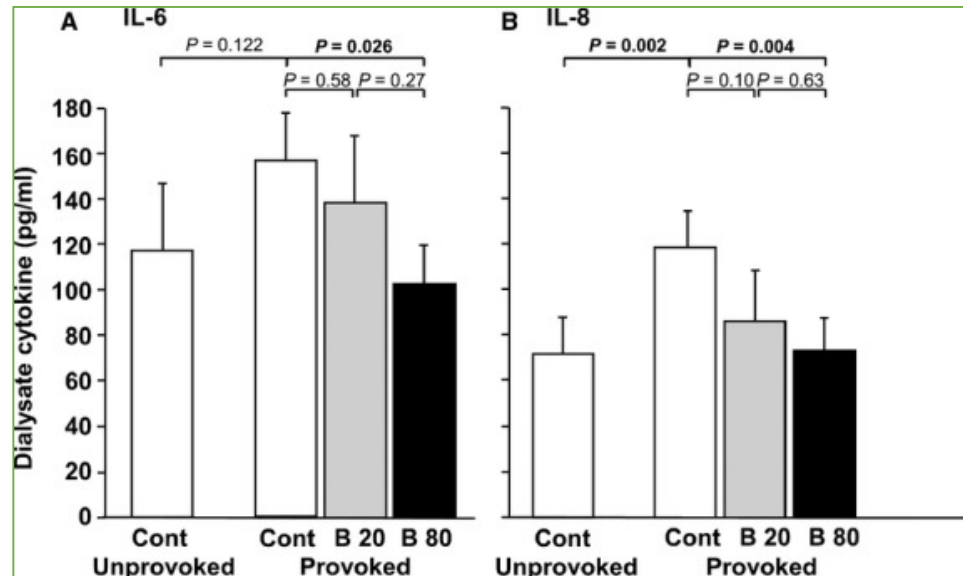
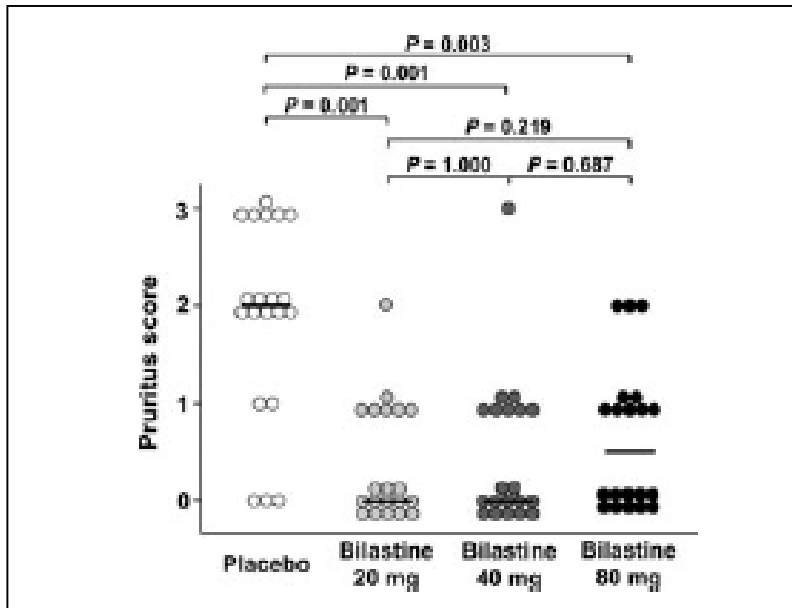
Up-dosing with bilastine results in improved effectiveness in cold contact urticaria

K. Krause, A. Spohr, T. Zuberbier, M. K. Church & M. Maurer

Department of Dermatology and Allergy, Alergie-Centrum-Charité, Charité – Universitätsmedizin Berlin, Berlin, Germany

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Up-dosing to 80 mg daily supports the urticaria treatment guidelines by showing excellent safety and no sedation while increasing its efficacy and antiinflammatory properties.



BILASTINA : NUOVA OPPORTUNITA' TERAPEUTICA PER IL PAZIENTE ALLERGICO

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REVIEW

Treatment of allergic rhinitis and urticaria: a review of the newest antihistamine drug bilastine

Therapeutics and Clinical Risk Management 2016:12 585–597

Ridolo et al. *Clinical and Molecular Allergy* (2015) 13:1
DOI 10.1186/s12948-015-0008-x

CLINICAL AND
MOLECULAR ALLERGY

REVIEW

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Bilastine: new insight into antihistamine treatment

Erminia Ridolo^{1*}, Marcello Montagni¹, Laura Bonzano¹, Cristoforo Incorvaia² and Giorgio Walter Canonica³