NKR 22: Høfeber og allergiskhelårssnue (allergisk rhinoconjunctivitis), PICO 1: Nasalsteroid versus perorale antihistaminer

Review information

Authors

Sundhedsstyrelsen[1]

[1][Empty affiliation]

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Characteristics of studies

Characteristics of included studies

Bender 2004

Methods	**Study design:** Randomized controlled trial **Study grouping:** Parallel group **Open Label:** **Cluster RCT:**
Participants	**Baseline Characteristics** Intranasal fluticasone propionate ● *Age years (sd)*: ● *Male %*: ● *Duration of rhinitis*: Ketotifen ● *Age years (sd)*: ● *Male %*: ● *Duration of rhinitis*:

	Included criteria: The study patients were 8- to 17-year-old children with adocumented history of SAR, positive response to a skin pricktest (wheal 3-mm greater than negative control or equal to thepositive control) for seasonal aeroallergens, and clinicallyidentifiable symptoms at the time of randomization. **Excluded criteria:** The study patients were 8- to 17-year-old children with adocumented history of SAR, positive response to a skin pricktest (wheal 3-mm greater than negative control or equal to thepositive control) for seasonal aeroallergens, and clinicallyidentifiable symptoms at the time of randomization.
Interventions	**Intervention Characteristics** Intranasal fluticasone propionate ● *description*: 2 sprays, 0.05mg each, in each nostril once each day and placebo tablet. Ketotifen ● *description*: loratidine 10 mg tablet once daily and placebo nasalspray
Outcomes	*Continuous*: ● QOL emotions ● Eye symptoms ● nasal congestion ● rhinorrhea/itching/sneasing ● drowsiness (hit reaction time) *Dichotomous*: ● Drowsiness ● Nose bleeding ● fractures ● Diabetes ● Growth retardation ● absence school
Identification	**Sponsorship source:** This research was supported by a grant from GlaxoSmithKiine. **Country:** US **Setting:** **Comments:** **Authors name:** Bender **Institution:** Department of Pediatrics, National Jewish Medical and Research Center, Denver, Colorado

	Email: benderb@njc.org **Address:** 1400 Jackson stDenver, CO 802006
Notes	**Identification:** **Participants:** **Study design:** **Baseline characteristics:** **Intervention characteristics:** **Pretreatment:** *Elisabeth Ginnerup-Nielsen* **Continuous outcomes:** *Elisabeth Ginnerup-Nielsen* Quality of Life Questionnaire, meassured with adolescent rhinoconjunctivitis Quality of Life Questionnaire25 items self reported quality-of-life measure designed specifical)y for patients aged 12 to 17 years with allergic rhinoconjunctivitis. The rating for those domains is on a 7-point scale from "not troubled" to "extremely troubled" (activity, nasal, nose/eye, eye, and emotions)Desuden bruges Treatment Outcome Question Scores· til rhinorrhea/itching/sneasing med spørgsmålet:"How do you feel that the study drug has controlled yourchild's allergic rhinitis symptoms in the last week?" **Dichotomous outcomes:** **Adverse outcomes:**

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Unclear risk	unclear
Allocation concealment (selection bias)	Unclear risk	unclear
Blinding of participants and personnel (performance bias)	Low risk	
Blinding of outcome assessment (detection bias)	Low risk	Comment: Not described but outcome self reported
Incomplete outcome data (attrition bias)	Unclear risk	Comment: No ITT analysis amount of pt's in each group and dropout unclear
Selective reporting (reporting bias)	Unclear risk	Comment: No trial protocol. Strange that there is no symptom score?
Other bias	Unclear risk	unclear

Condemi 2000

Methods	**Study design:** Randomized controlled trial **Study grouping:** Parallel group **Open Label:** **Cluster RCT:**
Participants	**Baseline Characteristics** Intranasal fluticasone propionate ● *Age Years (sd)*: ● *Male %*: ● *Years with rhinitis*: Ketotifen ● *Age Years (sd)*: ● *Male %*: ● *Years with rhinitis*: **Included criteria:** rhinitis symptom score of 24 points or greater on 4 of the 5 baseline days according to a 4-point scale for the five symptoms evaluated (nasal congestion, rhinorrhea, nasal itch, sneezing, andocular symptoms): 0 = none; symp- toms absent; 1 = mild; symptoms present but not annoying; 2 = moder-ate; symptoms present and annoying; and 3 = severe; symptoms interfere with daily activities or sleep. Tue max- imum symptom score any patient could record in four days was 60. **Excluded criteria:** Patients were excluded from the study if they had clinically significant abnormalities on physical examination or in urinalysis, hematology, or serum chemistry test results; nasal candidiasis, acute or chronic sinusitis, significant na- sal polyposis or septum deviation; or rhi- nitis medicamentosa. Women who were pregnant, lactating, or of childbearing potential and not practicing an approved method of contraception were excluded from the study. Recent or regular use of any of the foliowing medications was an exclusion criterion: topical corticosteroids, intranasal cromolyn, topical decongestants, systemic steroids, long-acting antihista- mines, or investigational drugs.Patients were also excluded if they had a history of habitual abuse of nasal decongestants; used medication for an- other indication that might cause, sup- press, or exacerbate the symptoms of seasonal allergic rhinitis; or had a his- tory of hypersensitivity or nonresponse to topical steroids or antihistamines

Interventions	**Intervention Characteristics** Intranasal fluticasone propionate ● *Description*: Triamcinolone acetonide aqueous0.055 mg spray.2 sprays in each nostril daily and placebo tablet Ketotifen ● *Description*: Loratadine 10 mg tablet and placebo nasal spray.
Outcomes	*Continuous*: ● Qol emotions lower=better ● eye symptoms ● nasal congestion ● rhinorrhea ● itching ● sneasing ● total nasal score *Dichotomous*: ● absence school/job ● drowsiness ● Nosebleeding ● fractures ● diabetes ● Growth retardation ● absence school
Identification	**Sponsorship source:** Rhone-Poulenc Rorer Pharmaceuticals Inc.Collegeville.Pensylvania **Country:** US **Setting:** **Comments:** **Authors name:** John Condemi **Institution:** Private practice, Rochester, New York **Email:** **Address:** Astma and Allergy919 Westfall rd Bldg BRochester NY 14618

Notes	**Identification:** **Participants:** **Study design:** **Baseline characteristics:** **Intervention characteristics:** **Pretreatment:** **Continuous outcomes:** *Elisabeth Ginnerup-Nielsen* Rhinocon- junctivitis Quality of Life Question- naire (RQLQ) at visits 2, 3, and 4. The questionnaire had seven dimensions:(1) activities, (2) emotions, (3) eye symptoms, (4) nasal symptoms, (5) non-hay fever problems, (6) practical problems, and (7) sleep. Subjects' quality of life in each dimension was assessed. Response options for each question were on a 0 to 6 scale. The mean dimension scores had a range from 0 to 6. Overall quality of life was the mean for all questions and also had a range from 0 to 6.Emotions er valgt ud i samråd med Morten **Dichotomous outcomes:** **Adverse outcomes:**

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Unclear risk	Comment: No information given on how the randomization was conducted.
Allocation concealment (selection bias)	Unclear risk	Comment: Not described
Blinding of participants and personnel (performance bias)	Low risk	Comment: . A double-dummy design was used: pa- tients treated with TAA aqueous nasal spray received a placebo oral medica- tion and patients treated with lorata- dine received a placebo nasal spray. Each loratadine tablet was placed in- side a capsule for blinding purposes
Blinding of outcome assessment (detection bias)	Low risk	Comment: "double blind" but unclear if this concerns assessors. But outcome selfreported

Incomplete outcome data (attrition bias)	Low risk	Comment: Of the 176 patients in the loratadine group, 157 (89%) com- pleted the study.. A total of 348 patients had both a baseline and post- baseline effic;acy assessment and were included in the intent-to-treat analysis (174 TAA aqueous and 174 loratadine). Relatively small dropout and ITT91% and 89% respectively completed the study. The dropout groups are described an comparable.
Selective reporting (reporting bias)	Low risk	Comment: No trial protocol but relevant outcome seems assessed
Other bias	Low risk	

Gehanno 1997

Methods	**Study design:** Randomized controlled trial **Study grouping:** Parallel group **Open Label:** **Cluster RCT:**
Participants	**Baseline Characteristics** Intranasal fluticasone propionate ● *Age years (sd)*: 37(15-70) ● *male %*: 47 ● *duration of rhinitis*: ● *< 2 years*: 16 ● *2-5 years*: 44 ● *6-10 year*: 16 ● *> 10 years*: 25 Ketotifen ● *Age years (sd)*: 41(13-80) ● *male %*: 42 ● *duration of rhinitis*: ● *< 2 years*: 18 ● *2-5 years*: 49 ● *6-10 year*: 9 ● *> 10 years*: 25 **Included criteria:** > 12 years, history of SAR, Positive prick test to seasonal allergens.

	Excluded criteria: Childbearing potential. inhalation medicin, corticosteroids, Nasal abnormalities.
Interventions	**Intervention Characteristics** Intranasal fluticasone propionate ● *Description*: Ketotifen ● *Description*:
Outcomes	*Continuous*: ● QOL emotions ● eye symtoms ● nasal congestion ● rhinorrhea ● itching ● sneasing ● symptoms totalscore
Identification	**Sponsorship source:** Glaxo laboratories **Country:** France **Setting:** **Comments:** **Authors name:** P. Gehanno **Institution:** Oto.Rhino-Laryngologie Hospital Claude Bernard Paris **Email:** **Address:** Unite Respiratoire43 Rue Vineuse75116 ParisFrance
Notes	**Identification:** **Participants:** **Study design:** **Baseline characteristics:** *Elisabeth Ginnerup-Nielsen* duration of rhinitis opgivet i % **Intervention characteristics:** **Pretreatment:** **Continuous outcomes:**

	Elisabeth Ginnerup-Nielsen symptomer opgjort uden sd CI eller lignende. Forfatter er kontaktet i uge 3 2015 for oplysninger om dettePÅ en overall 0-3 symptom scale (3 = worse) af (obstruction, rhinorhhea, sneezing, itching) scores.2.5 intervention (N= 57)4 control gruppe (N= 57) **Dichotomous outcomes:** **Adverse outcomes:**

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Unclear risk	Comment: unclear how
Allocation concealment (selection bias)	Unclear risk	Comment: Not described
Blinding of participants and personnel (performance bias)	Low risk	Quote: "Qualifying patients were randomly assigned to receive fluticasone propionate aqueous nasal spray 200 |ig (two 50-|ig sprays in each nostril) and placebo tablet, or loratadine (one 10-mg tablet) and placebo nasal spray (two sprays in each nos-"
Blinding of outcome assessment (detection bias)	Low risk	Comment: Double-blind double dummu study. and selfreported outcome
Incomplete outcome data (attrition bias)	Low risk	Quote: "Eleven patients withdrew from the study. Two patients discontinued fluticasone propionate be- cause of lack of efficacy. Nine patients discontinued loratadine for the following reasons: lack of effi- cacy (n=4), adverse events («=2), failure to return {n=2), or noncompliance {n = l)." Comment: Relatively small dropout
Selective reporting (reporting bias)	High risk	Comment: outcome unclearly reported
Other bias	Low risk	

Gradman 2007

Methods	
Participants	
Interventions	
Outcomes	
Identification	
Notes	From updating search

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	**Quote from text:** a 1:1 ratio by a computer-generated randomization **Comment:** Computer generated sequence
Allocation concealment (selection bias)	Unclear risk	It is not described how the allocation sequence was concealed.
Blinding of participants and personnel (performance bias)	Low risk	The participants received identical nasal sprays, and we only use data from this study until the washout period - not the cross over period. In this way the personnel is blinded to who is getting better after the cross over.
Blinding of outcome assessment (detection bias)	Low risk	The potential for observer bias was avoided by the double-blind study design
Incomplete outcome data (attrition bias)	Low risk	Supportive analyses were car- ried out on the intent-to-treat (ITT) population, which was defined as all patients who were randomized and received at least 1 dose of study medication. ITT analyses were propertly made.
Selective reporting (reporting bias)	Low risk	This study only presents data on 'Growth' which the study title tells us it will. No protocol located.

Other bias	Unclear risk	Varying results when you look at each patient. Some have a larger growth when treated with intervention and others have a larger growth when treated with placebo.

Jordana 1996

Methods	**Study design:** Randomized controlled trial **Study grouping:** Parallel group **Open Label:** **Cluster RCT:**
Participants	**Baseline Characteristics** Intranasal fluticasone propionate ● *Age years (sd)*: 52.9 ● *male %*: ● *years with rhinitis*: 52.9 ● *Medical history (n)*: ● *Moderate*: 45 ● *Severe*: 76 Ketotifen ● *Age years (sd)*: 59.6 ● *male %*: ● *years with rhinitis*: 59.6 ● *Medical history (n)*: ● *Moderate*: 43 ● *Severe*: 76 **Included criteria:** 12-17 years of age. Pos prick-test to ragweed extract. Moderate to severe SAR. **Excluded criteria:** Perennial rhinitis. medicin affecting rhinitis. Corticosteroids.structural nasal abnormalities or concurrent disease interfering study results.
Interventions	**Intervention Characteristics** Intranasal fluticasone propionate ● *Desription*: nasal spray, 0.050 mg. 2 sprays in each nostril daily. and placebo tablet Ketotifen

	● *Desription*: Tablet loratadine 10 mg oraly daily and placebo nasal spray.
Outcomes	*Continuous*: ● Nasal congestion ● Eye symptoms ● Sneezing ● Itching ● Runny nose
Identification	**Sponsorship source:** Supported by Glaxo Canada, Inc **Country:** Canada **Setting:** **Comments:** **Authors name:** Gloria Jordana, **Institution:** Department of Pediatrics, McMaster University, Hamilton; bDepartment of Medicine, Queens University, Kingston **Email:** **Address:** Jerry Dolovich, MD, McMaster University Medical Centre, 1200 Main St. West, Room 3V41 Hamilton, Ontario L8N 3Z5, Canad
Notes	**Identification:** **Participants:** **Study design:** **Baseline characteristics:** **Intervention characteristics:** **Pretreatment:** **Continuous outcomes:** *Elisabeth Ginnerup-Nielsen* Der er opgivet symtomer uden sd eller lignende usikkerhed. Forfatterne er kontaktet i uge 3 om disse værdier.assessment at 28 days **Dichotomous outcomes:** **Adverse outcomes:**

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Unclear risk	Quote: "randomized, double-blind, parallel- group study" Comment: unclear how sequence generation as done
Allocation concealment (selection bias)	Unclear risk	Comment: Not described
Blinding of participants and personnel (performance bias)	Low risk	Quote: "Subjects were randomly assigned to receive either FP aqueous nasal spray, 200 ~g plus placebo oral tablet, once daily each morning or placebo aqueous nasal spray and loratadine oral tablet, 10 mg, once daily each morning for the duration of the treatment period." Comment: Double-blind double-dummy study - seems blinded
Blinding of outcome assessment (detection bias)	Low risk	Quote: "The primary efficacy assessment was the percentage of symptom-free days (score of 0) for nasal blockage during the day. Throughout the trial period, the subjects were also asked to keep a daily record of all medications taken and any side effects or problems they experienced." Comment: Not relevant when outcome is patient reported
Incomplete outcome data (attrition bias)	Low risk	Comment: dropout 30/240 - relatively small dropout and ITT analysis done.
Selective reporting (reporting bias)	Low risk	
Other bias	High risk	Comment: unclear how medication was used

Kaszuba 2001

Methods	**Study design:** Randomized controlled trial **Study grouping:** Parallel group **Open Label:** YES **Cluster RCT:**

Participants	**Baseline Characteristics** Intranasal fluticasone propionate ● *Age years (sd)*: 27.5 ● *Male %*: 48 ● *Years with rhinitis*: Ketotifen ● *Age years (sd)*: 30 ● *Male %*: 57 ● *Years with rhinitis*: **Included criteria:** > 18 years of age. history of SAR during last 2 seasons.Pos ragweed skin prick test. **Excluded criteria:** Renal,hepatic or cardiovascular disease.nasal abnormalities. perennial rhinitis. corticosteroids. nasal medicin. pregnant or lactating. immunotherapy.
Interventions	**Intervention Characteristics** Intranasal fluticasone propionate ● *dose*: luticasone propionate nasal spray (100 µg/dper nostril) Ketotifen ● *dose*: loratadine tablet (10 mg/d)
Outcomes	*Continuous*: ● QOL ● Eye symptoms ● Runny nose ● Sneezing ● Stuffed nose
Identification	**Sponsorship source:** Glaxo-wellcome **Country:** US **Setting:** **Comments:** **Authors name:** Scott M Kaszuba **Institution:** Otolaryngology-head and neck, department of surgery, the Pritzker school of medicine

	Email: rnacleri@surgery.bsd.uchicago.edu **Address:** university of Chicago, 5841 S Maryland Ave, mail code 1035,Chicago, IL 60637
Notes	**Identification:** **Participants:** **Study design:** **Baseline characteristics:** **Intervention characteristics:** **Pretreatment:** **Continuous outcomes:** *Elisabeth Ginnerup-Nielsen* outcome described without sd. Quality of life was assessed with the self-administered RQLQas described and validated by Juniper and Guyatt.10In brief,the RQLQ has 7 domains: sleep, non−nasal/eye, practical,nasal, eye, emotional, and activity. The average score foreach domain was computed and used for data analysis. higher=worse **Dichotomous outcomes:** **Adverse outcomes:**

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Unclear risk	Comment: Not described
Allocation concealment (selection bias)	Unclear risk	Comment: not described
Blinding of participants and personnel (performance bias)	High risk	Comment: open label
Blinding of outcome assessment (detection bias)	Unclear risk	Quote: "Also, the use of blindly assessed objective measures reinforces our findings."
Incomplete outcome data (attrition bias)	Low risk	Quote: "Eighty-eight subjects were enrolled into the study. There were 44 subjects randomized to each arm of the" Quote: "There was a low dropout rate in both groups and no difference between"
Selective reporting (reporting bias)	High risk	Comment: unclearly reported outcomes

Other bias	High risk	

Kulapaditharom 2010

Methods	
Participants	
Interventions	
Outcomes	
Identification	
Notes	

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Unclear risk	Not described
Allocation concealment (selection bias)	Unclear risk	Not described
Blinding of participants and personnel (performance bias)	Unclear risk	Not described
Blinding of outcome assessment (detection bias)	Unclear risk	Not described
Incomplete outcome data (attrition bias)	Unclear risk	It is unclear whether there is drop out, and if a proper imputation methods is used.
Selective reporting (reporting bias)	Unclear risk	They describe an approved protocol, but it has not been possible to find
Other bias	Unclear risk	This study is lacking of information; it is not to tell whether they are not following prescribed protocol or if they write in another form than standard studies are written from.

Ratner 1998

Methods	**Study design:** Randomized controlled trial **Study grouping:** Parallel group **Open Label:** **Cluster RCT:**
Participants	**Baseline Characteristics** Intranasal fluticasone propionate ● *Age years (SD)*: 40,7(13-80) ● *male %*: 45 ● *Years with rhinitis*: Ketotifen ● *Age years (SD)*: 40,1(15-70) ● *male %*: 46 ● *Years with rhinitis*: **Included criteria:** Male and nonpregnant female outpatients, aged 12 years or older, were eligible for the study if they had moderate to severe seasonal allergic rhinitis diagnosed according to four criteria: (1) positive (a 2+ reaction, scored on a scale of 0 to 4, defined as a wheal diame- ter at least 3 mm greater than diluent control) skin test reaction to mountain cedar (Junipenis ashei) allergen within 12 months; (2) appearance of the nasal mucosa consistent with a diagnosis of seasonal allergic rhini- tis; (3) a history of seasonal onset and offset of symp- toms for at least two previous mountain cedar pollen seasons; and (4) moderate to severe symptoms of rhinitis evidenced by patient diary card ratings during a run-in. **Excluded criteria:** Patients were ineligible for the study if they had received, before the screening visit, treatment with loratadine within 1 week, astemizole within 6 weeks, cromolyn sodium within 2 weeks, over-the- counter or prescrtption medications that could affect rhinitis symptomatology (eg, nasal decongestants) within 72 hours, or inhaled, intranasal, or systemic cor- ticosteroids within 1 month. Patients could not have either a septal deviation (>50% blockage) or a nasal polyp that could obstruct penetration of an intranasal spray. Patients were not included if they had a history of nasal septal surgery or nasal septal perforation. Patients were excluded if they had clinically signifi- cant physical examination tindings at screening, had evidence of candidal infection, or were pregnant or lactating. Patients were also excluded if they had any condition or impairment that might affect their ability to complete the study or provide informed consent.

Interventions	**Intervention Characteristics** Intranasal fluticasone propionate ● *Dose*: Patients who met this criterion were randomly assigned on day 0 (baseline) to receive one of four reg- imens for 14 days: FP ANS 200 pg (two 50-µg sprays per nostril) plus one placebo capsule (to match the loratadine dosing form) once daily at 8 AM; Ketotifen ● *Dose*: ; placebo nasal spray (two sprays per nostril) plus one encapsu- lated loratadine 10-rng tablet once daily at 8 AM
Outcomes	*Continuous*: ● QOL emotions ● QOL (total score) ● Eye symptoms ● rhinorrhea ● itching ● sneezing ● nasal congestion ● total symtom score *Adverse Events*: ● Nosebleeding
Identification	**Sponsorship source:** This study was supporte<l by a granl from Glaxo Welkome Ine. **Country:** US **Setting:** **Comments:** **Authors name:** Paul H Ratner **Institution:** San Antonio, Austin, and New Braunfels, Te:i:as; **Email:** **Address:** Paul H.Ratner; MD, Sylvana Research., 7711 Louis Pasteur Drive, Suit.e 406, San Antonio, TX 78229.

Notes	**Identification:** **Participants:** **Study design:** **Baseline characteristics:** **Intervention characteristics:** **Pretreatment:** **Continuous outcomes:** *Elisabeth Ginnerup-Nielsen* withdrawals due to adverse events: 3 in intervention group and 2 in control - not further described. **Dichotomous outcomes:** **Adverse outcomes:** *Elisabeth Ginnerup-Nielsen* . The most frequently reported drug-related adverse events were blood in the nasal mucus (1% to 2% in active treatment groups and 3% in the placebo group), ep s- taxis (l% for all treatments), and xerostomia (2% for all treatments).

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Unclear risk	Unclear
Allocation concealment (selection bias)	Unclear risk	Comment: Not described
Blinding of participants and personnel (performance bias)	Low risk	Comment: Quite a lot described about dummies and placebo tabletsdouble-blind double-dummy study
Blinding of outcome assessment (detection bias)	Low risk	Comment: Selfreported outcome
Incomplete outcome data (attrition bias)	Low risk	Comment: 95 % completion rate
Selective reporting (reporting bias)	Low risk	Comment: No trial protocol but outcome assessed
Other bias	Low risk	

Schoenwetter 1995

Methods	**Study design:** Randomized controlled trial **Study grouping:** Parallel group **Open Label:** **Cluster RCT:**
Participants	**Baseline Characteristics** Intranasal fluticasone propionate ● *Age years (sd)*: 31,4(11,5) ● *male %*: 42% ● *Years with rhinitis*: 19.1(11,6) Ketotifen ● *Age years (sd)*: 31,2(11,5) ● *male %*: 43% ● *Years with rhinitis*: 17,2(11,2) **Included criteria:** 2 consecutive seasons of SAR. Positive skin test to ragweed. **Excluded criteria:** pregnant and lactating women. signs of sinusitis, nasal pathology, drugs that might interfere vith rhinitis symtoms. Infections in the nose.
Interventions	**Intervention Characteristics** Intranasal fluticasone propionate ● *Dose*: once-daily treatmentwith intranasaltri- amcinolone acetonide220 ug plus 1 placebo capsule Ketotifen ● *Dose*: placebo nasal spray (2 spraysper nostril) and 1 loratadinelo-mg capsule (loratadinetablet placedwithin a capsule).
Outcomes	*Continuous*: ● QOL emotions ● Ocular symptoms ● Total nasal score ● nasal congestion (stuffiness) ● Nasal drip

	● rhinorrhea ● sneezing ● nasal itch *Dichotomous*: ● nose bleeding ● drowsiness ● days of absence
Identification	**Sponsorship source:** Rhone-poulenc Rorer Pharma. Inc. **Country:** US **Setting:** **Comments:** **Authors name:** William Schoenwetter **Institution:** Park Nicolet Medical center **Email:** **Address:** 3800 Park Nicollet Blvd. Minneapolis MN 55416
Notes	**Identification:** **Participants:** **Study design:** **Baseline characteristics:** **Intervention characteristics:** **Pretreatment:** **Continuous outcomes:** *Elisabeth Ginnerup-Nielsen* Nasalstuffiness,rhinor-rhea,postnasaldrip,ocularsymptoms,sneezing,andnasalitchwereevaluated on 4 point scale **Dichotomous outcomes:** **Adverse outcomes:**

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Unclear risk	Quote: "were ran- domized in a 1: 1 ratio to 28" Comment: Not described properly
Allocation concealment (selection bias)	Unclear risk	Comment: Not descrribed
Blinding of participants and personnel (performance bias)	Low risk	Quote: "and 1 placebo cap- sule or placebo nasal spray (2 sprays per nostril) and 1 loratadine lo-mg capsule (loratadine tablet placed within a capsule)." Comment: Double-blind double-dummy study
Blinding of outcome assessment (detection bias)	Low risk	Comment: Subjective selfreported outcomes
Incomplete outcome data (attrition bias)	Low risk	Comment: low dropout
Selective reporting (reporting bias)	Low risk	Comment: No trial protocol but relevant outcomes seem reported
Other bias	Low risk	

Takahashi 2012

Methods	
Participants	
Interventions	
Outcomes	
Identification	
Notes	From updating search

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	The physician contacted the data-collecting center after evaluating the eligibility criteria of the patient. Patients who matched the eligibility criteria were registered in the study and assigned in accordance with the computer-generated random allocation table with a block size of 4 and 6.
Allocation concealment (selection bias)	Low risk	To conceal the assignment sequence, central randomization was used, and the block size was not released.
Blinding of participants and personnel (performance bias)	Low risk	Additionally, our study did not involve any blinding processes, which may have led to a potential bias in the results.
Blinding of outcome assessment (detection bias)	High risk	Additionally, our study did not involve any blinding processes, which may have led to a potential bias in the results.
Incomplete outcome data (attrition bias)	Low risk	These analyses were based on intent-to-treat.
Selective reporting (reporting bias)	Low risk	Relevant outcomes presented and trials was registered before taking place: The clinical trial registration number is UMIN000000575 (www.umin.ac.jpctrindexhtm)Protocol?
Other bias	Unclear risk	This study was performed as an open label study. It is unknown if other bias, than those already assess, could have influenced on the results.

Footnotes

Characteristics of excluded studies

D'Ambrosio 1998

Reason for exclusion	Wrong study design

Fokkens 2004

Reason for exclusion	Wrong patient population

Munch 1983

Reason for exclusion	Wrong comparator

Rinne 2002

Reason for exclusion	Wrong patient population

Footnotes

Characteristics of studies awaiting classification

Footnotes

Characteristics of ongoing studies

Footnotes

References to studies

Included studies

Bender 2004

Bender,B. G.; Milgrom,H.. Comparison of the effects of fluticasone propionate aqueous nasal spray and loratadine on daytime alertness and performance in children with seasonal allergic rhinitis. Annals of Allergy, Asthma & Immunology : Official Publication of the American College of Allergy, Asthma, & Immunology 2004;92(3):344-349. [DOI: S1081-1206(10)61573-6 [pii]]

Condemi 2000

Condemi,J.; Schulz,R.; Lim,J.. Triamcinolone acetonide aqueous nasal spray versus loratadine in seasonal allergic rhinitis: efficacy and quality of life. Annals of Allergy, Asthma & Immunology : Official Publication of the American College of Allergy, Asthma, & Immunology 2000;84(5):533-538. [DOI: S1081-1206(10)62518-5 [pii]]

Gehanno 1997

Gehanno,P.; Desfougeres,J. L.. Fluticasone propionate aqueous nasal spray compared with oral loratadine in patients with seasonal allergic rhinitis.. Allergy 1997;52(4):445-450. [DOI:]

Gradman 2007

[Empty]

Jordana 1996

Jordana,G.; Dolovich,J.; Briscoe,M. P.; Day,J. H.; Drouin,M. A.; Gold,M.; Robson,R.; Stepner,N.; Yang,W.. Intranasal fluticasone propionate versus loratadine in the treatment of adolescent patients with seasonal allergic rhinitis.. Journal of Allergy & Clinical Immunology 1996;97(2):588-595. [DOI:]

Kaszuba 2001

Kaszuba,S. M.; Baroody,F. M.; deTineo,M.; Haney,L.; Blair,C.; Naclerio,R. M.. Superiority of an intranasal corticosteroid compared with an oral antihistamine in the as-needed treatment of seasonal allergic rhinitis.. Archives of Internal Medicine 2001;161(21):2581-2587. [DOI:]

Kulapaditharom 2010

[Empty]

Ratner 1998

Ratner,P. H.; van Bavel,J. H.; Martin,B. G.; Hampel,F. C.,Jr; Howland,W. C.,3rd; Rogenes,P. R.; Westlund,R. E.; Bowers,B. W.; Cook,C. K.. A comparison of the efficacy of fluticasone propionate aqueous nasal spray and loratadine, alone and in combination, for the treatment of seasonal allergic rhinitis. The Journal of family practice 1998;47(2):118-125. [DOI:]

Schoenwetter 1995

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[Empty]

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Rinne 2002

Rinne,J.; Simola,M.; Malmberg,H.; Haahtela,T.. Early treatment of perennial rhinitis with budesonide or cetirizine and its effect on long-term outcome.. Journal of Allergy & Clinical Immunology 2002;109(3):426-432. [DOI:]

Data and analyses

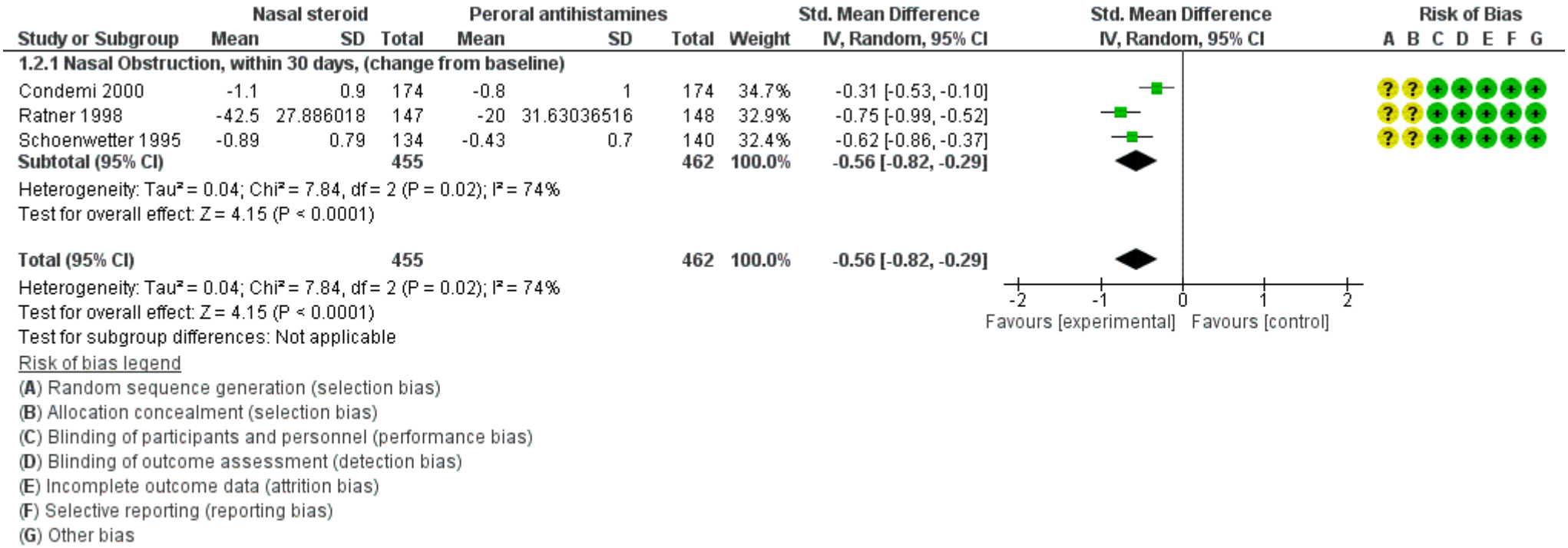
1 Nasal steroid vs Peroral antihistamines

Outcome or Subgroup	Studies	Participants	Statistical Method	Effect Estimate
1.2 Tilstoppet næse (Nasal Obstruction)	3	917	Std. Mean Difference (IV, Random, 95% CI)	-0.56 [-0.82, -0.29]
1.2.1 Nasal Obstruction, within 30 days, (change from baseline)	3	917	Std. Mean Difference (IV, Random, 95% CI)	-0.56 [-0.82, -0.29]
1.3 Total næsesymptomer (Total nasal symptom)	2	307	Std. Mean Difference (IV, Random, 95% CI)	-0.70 [-0.93, -0.47]
1.4 Næseflod (Rhinorrhea)	2	622	Std. Mean Difference (IV, Random, 95% CI)	-0.47 [-1.00, 0.05]
1.4.3 Rhinorrhea, within 30 days (change from baseline)	2	622	Std. Mean Difference (IV, Random, 95% CI)	-0.47 [-1.00, 0.05]
1.5 Næsekløe (Nasal Itching)	3	917	Std. Mean Difference (IV, Random, 95% CI)	-0.42 [-0.65, -0.18]
1.5.4 Itching, within 30 days (change from baseline)	3	917	Std. Mean Difference (IV, Random, 95% CI)	-0.42 [-0.65, -0.18]
1.6 Nysen (Sneezing)	3	917	Std. Mean Difference (IV, Random, 95% CI)	-0.52 [-0.73, -0.32]
1.6.5 Sneezing, within 30 days from baseline (change from baseline)	3	917	Std. Mean Difference (IV, Random, 95% CI)	-0.52 [-0.73, -0.32]
1.7 Øjensymotomer (Eye symptoms)	3	662	Std. Mean Difference (IV, Random, 95% CI)	-0.08 [-0.23, 0.08]
1.7.1 Ocular Symptoms, within 30 days (change from baseline)	3	662	Std. Mean Difference (IV, Random, 95% CI)	-0.08 [-0.23, 0.08]
1.8 Døsighed (Dizziness)	0	0	Mean Difference (IV, Fixed, 95% CI)	Not estimable
1.9 Næseblødning (Nose bleeding9	0	0	Mean Difference (IV, Fixed, 95% CI)	Not estimable

1.10 Knoglebrud (Fractures)	0	0	Mean Difference (IV, Fixed, 95% CI)	Not estimable
1.11 Diabetes	0	0	Odds Ratio (M-H, Fixed, 95% CI)	Not estimable
1.12 Fraværsdage fra arbejde/skole (Days away from school/work)	0	0	Odds Ratio (M-H, Fixed, 95% CI)	Not estimable
1.13 Livskvalitet (Quality of Life)	1	295	Mean Difference (IV, Fixed, 95% CI)	-0.90 [-1.18, -0.62]
1.13.1 Quality of Life, total score 2 weeks (change values)	1	295	Mean Difference (IV, Fixed, 95% CI)	-0.90 [-1.18, -0.62]
1.14 Væksthæmning (ben) (Growth retardation (leg))	0	0	Mean Difference (IV, Fixed, 95% CI)	Not estimable

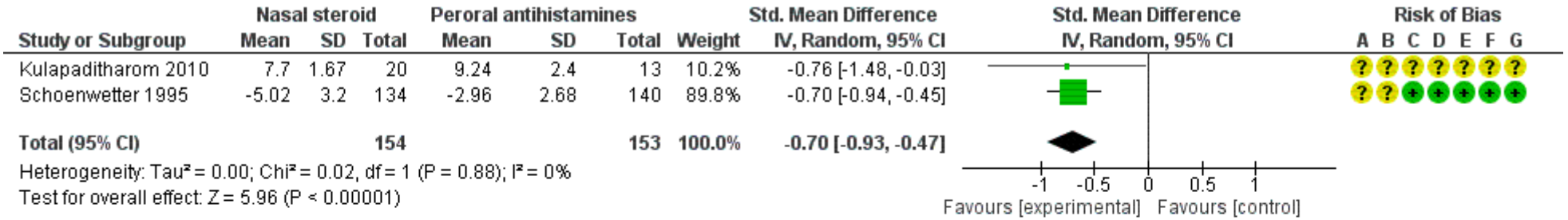
Figures

Figure 1 (Analysis 1.2)



Forest plot of comparison: 1 Nasal steroid vs Peroral antihistamines, outcome: 1.2 Tilstoppet næse (Nasal Obstruction).

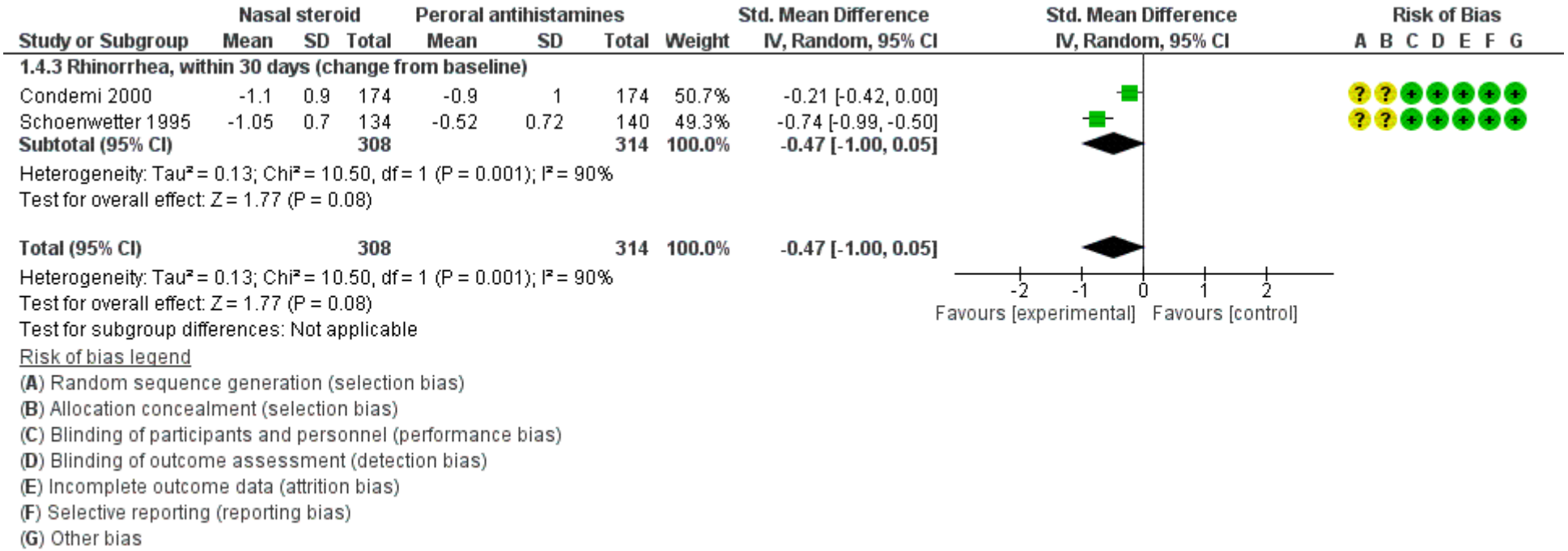
Figure 2 (Analysis 1.3)



Risk of bias legend
(**A**) Random sequence generation (selection bias)
(**B**) Allocation concealment (selection bias)
(**C**) Blinding of participants and personnel (performance bias)
(**D**) Blinding of outcome assessment (detection bias)
(**E**) Incomplete outcome data (attrition bias)
(**F**) Selective reporting (reporting bias)
(**G**) Other bias

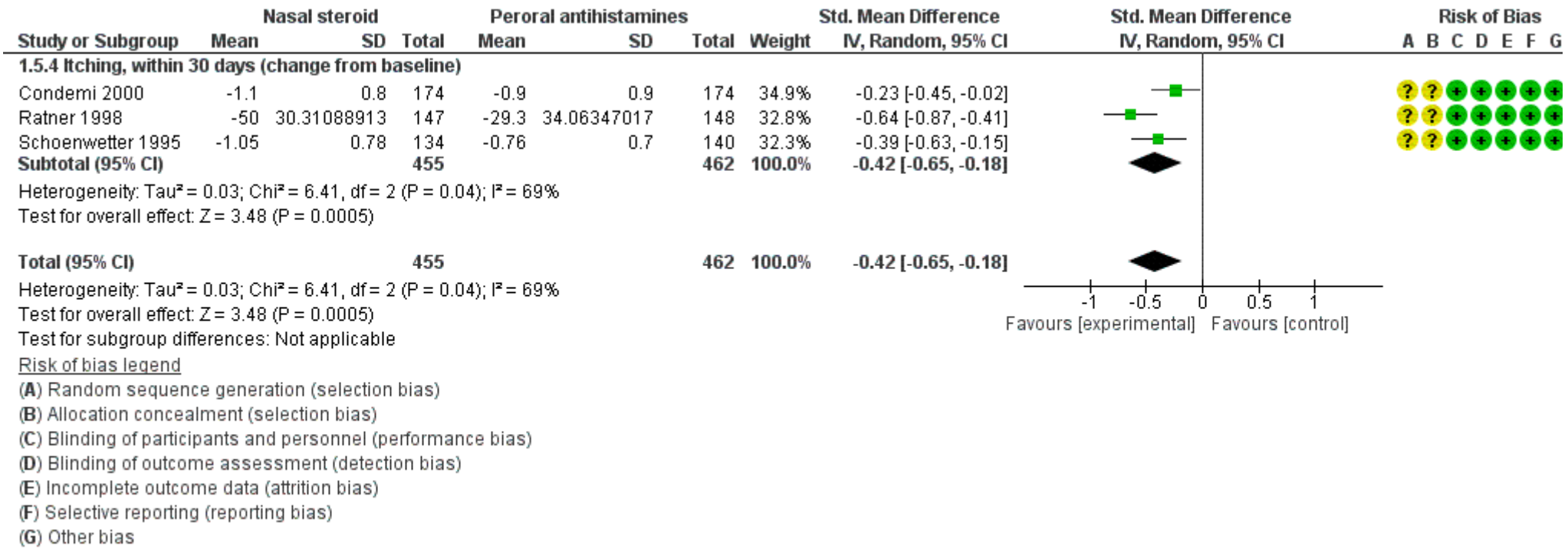
Forest plot of comparison: 1 Nasal steroid vs Peroral antihistamines, outcome: 1.3 Total næsesymptomer (Total nasal symptom).

Figure 3 (Analysis 1.4)



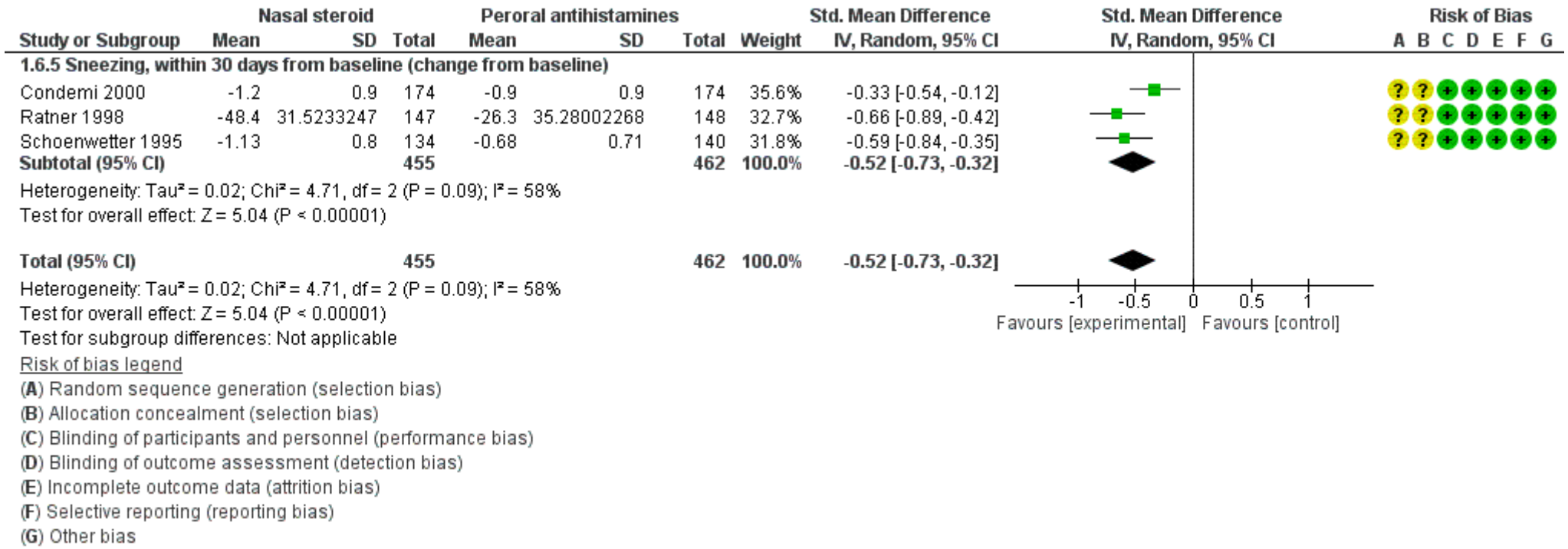
Forest plot of comparison: 1 Nasal steroid vs Peroral antihistamines, outcome: 1.4 Næseflod (Rhinorrhea).

Figure 4 (Analysis 1.5)



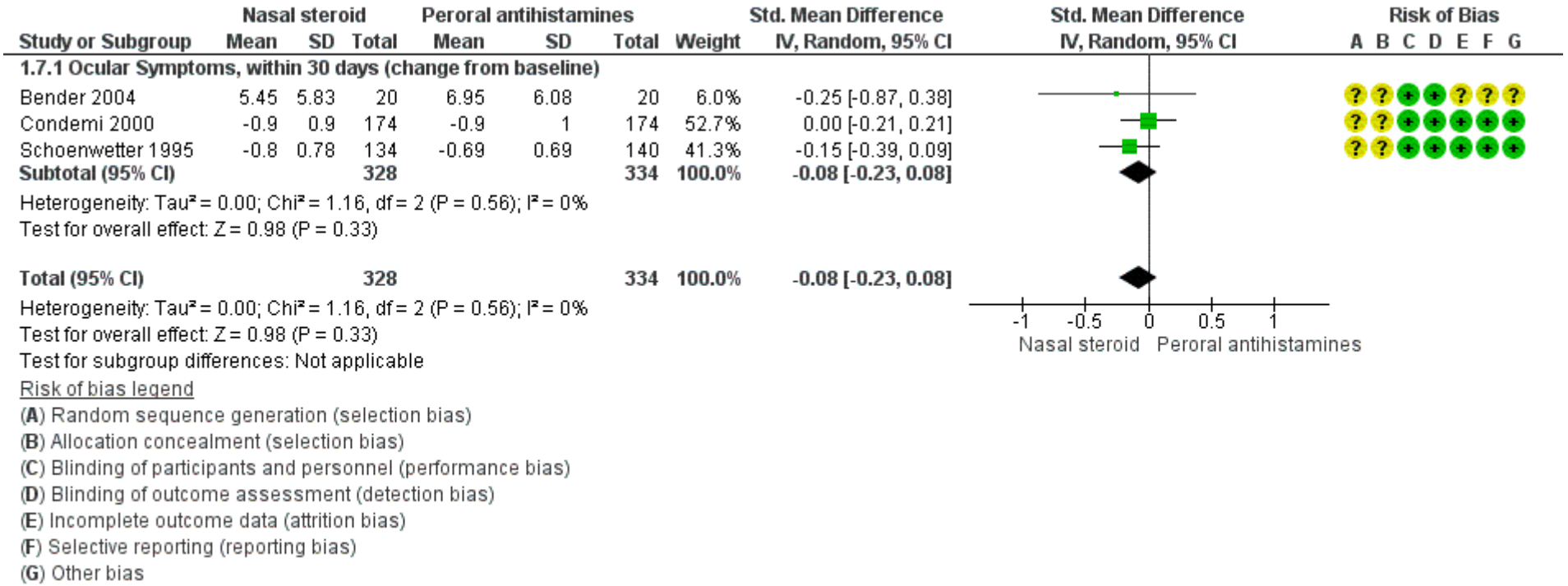
Forest plot of comparison: 1 Nasal steroid vs Peroral antihistamines, outcome: 1.5 Næsekløe (Nasal Itching).

Figure 5 (Analysis 1.6)



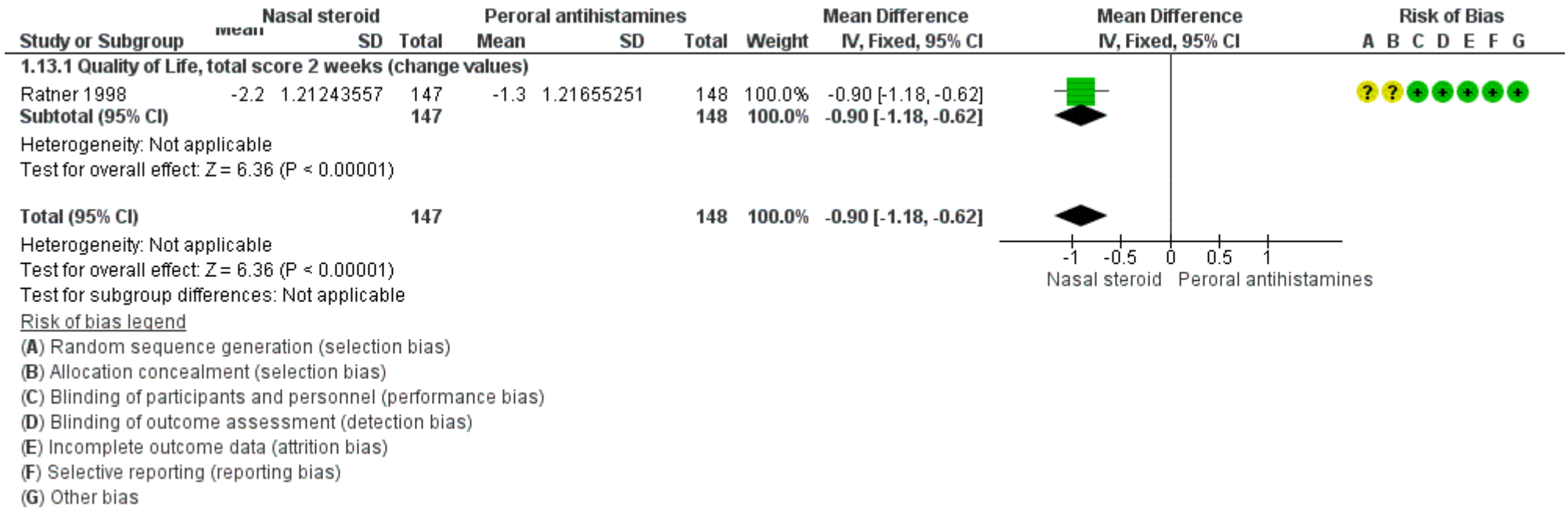
Forest plot of comparison: 1 Nasal steroid vs Peroral antihistamines, outcome: 1.6 Nysen (Sneezing).

Figure 6 (Analysis 1.7)



Forest plot of comparison: 1 Nasal steroid vs Peroral antihistamines, outcome: 1.7 Øjensymotomer (Eye symptoms).

Figure 7 (Analysis 1.13)



Forest plot of comparison: 1 Nasal steroid vs Peroral antihistamines, outcome: 1.13 Livskvalitet (Quality of Life).