Table C-2. Outcomes of acaricide (dust mite pesticide) studies

| Study | Asthma Control  | Exacerbations and Healthcare Utilization  | Pulmonary Physiology | Quality of Life | Symptoms(secondary measure) | Allergen Levels(secondary measure) |
| --- | --- | --- | --- | --- | --- | --- |
| Bahir et al. 19971 | NR  | NR | **Spirometry:** Comparison of arms showed no difference between treatments for any outcomes (data shown graphically; p>0.05)FEV1, % mean (SD)Baseline: 73.5 (13.2)% 6 months: 78.2 (14.7)%Not statistically significantMorning PEFR, mean (SD): Baseline: 245 (85) 6 months: 282 (82)Not statistically significantEvening PEFR, mean (SD):Baseline: 253 (85) 6 months: 291 (83)Not statistically significant | NR | **Measurement:** Patient diaries, 12-point scale with lower scores showing fewer symptoms**Symptom scores**,mean (SD): Comparison of arms showed no difference between treatments (data shown graphically; p>0.05)Baseline: 2.6 (2) 6 months: 1.5 (1.5)p<0.001 | **Measurement:** Patients collected dust samples by vacuuming mattresses and floors; samples collected 2 times: before and after study**Acarex score** (mean [SD]) improved within both treatment groups over time:Baseline: 3.5 (0.6)6 months: 2.9 (0.9)p<0.001. Comparison of arms showed no difference between treatments (data shown graphically; p>0.05) |
| van der Heide et al. 19972 | NR  | NR | **FEV1 and Vital Capacity:** Comparison of arms did not show difference between groups; data not shown**PC20 histamine:** No comparison between arms; statistically significant improvement over baseline in acaricide and mattress cover arms (p<0.05; data shown graphically); however, change was less than one doubling dose, which may not be clinically significant | NR | NR | NR |
| Chang et al. 19963 | NR  | NR | **Spirometry at 3-month followup:**Comparison of arms showed no difference between arms or over time, for any outcomes. Test statistics NR.FEV1*,* % mean (SD):Acarosan: 87% (20%)Control: 90% (15%) PEFR,L/min, mean (SD):Acarosan: 411 (75)Control: 383 (100)PC20, mg/mL, mean (SD):Acarosan: 0.87 (2.29)Control: 0.82 (3.84) | NR | NR | **Measurement:** Dust samples collected by vacuuming mattresses and floors; study does not report who collected samples; samples were collected 5 times before and throughout the study periodHDM allergen, Mattress mcg/g dust, (SD):Acarosan baseline: 2.17 (2.64)Acarosan 3 months: 0.06 (1.12)Control baseline: 1.68 (2.22)Control 3 months: 0.28 (1.32) Comparison of arms showed no difference, but allergen levels were reduced within both groups over baseline (p<0.05)HDM allergen, Floor mcg/g dust, (SD):Acarosan baseline: 2.38 (2.64)Acarosan 3 months: 0.50 (1.71)Control baseline: 2.05 (2.05) Control 3 months: 1.10 (2.17) Comparison of arms showed no difference, but allergen levels were reduced over baseline in Acarosan arm (p<0.05) |
| Geller-Bernstein et al. 19954 | NR  | NR | NR | NR | **Measurement:** For the measures of daily activity disruption, and wheezing frequency, scores were derived from patient diaries (completed 2 times per week) using a 4-point Likert scale with lower scores showing fewer symptoms; for the measures of parent and doctor evaluation of severity, scores were derived from a 100-point visual analog scale completed 1 time each month, with lower scores showing less severity**Daily activity disruption**, mean:Acardust baseline: 1.17Acardust 6 months: 0.13Placebo baseline: 0.94Placebo 6 months: 0.27Acardust vs. placebo: p=0.02**Wheezing frequency**, mean:Acardust baseline: 1.94Acardust 6 months: 0.67Placebo baseline: 2.06Placebo 6 months: 0.73Acardust vs. placebo: p=0.1**Parent evaluation of severity**, mean:Acardust baseline: 34.83Acardust 6 months: 5.47Placebo baseline: 29.88Placebo 6 months: 6.60Acardust vs. placebo: p=0.001**Doctor evaluation of severity**, mean:Acardust baseline: 34.56Acardust 6 months: 4.20Placebo baseline: 29.65Placebo 6 months: 6.00Acardust vs. placebo: p=0.04 | **Measurement**: Patients collected dust samples by vacuuming mattresses; samples were collected 5 times before and throughout the study periodHDM allergen mcg/g dust (SD)Acardust baseline: 10.05 (13.74)Acardust 6 months: 4.15 (6.51)Placebo baseline: 6.01 (8.01)Placebo 6 months: 3.01 (4.33)Allergen counts decreased to a greater degree over baseline in the Acardust group (p=0.02) |
| Sette et al. 19945 | NR  | NR | **PC20** change from baseline (mean, SEM)Study period 1Acarosan: -2.39 (1.53) mg/mLPlacebo: -0.07 (1.05)Control: -5.75 (4.42)Study period 2Acarosan: -1.95 (1.19)Placebo: -1.82 (0.74)Control: -3.84 (3.12)p=not significant, actual p-value NR | NR | NR | **Serum IgE** change from baseline (no measure of variance provided)Study period 1Acarosan: -1.41Placebo: 0.45Control: 9.60p=not significant, actual p-value NRStudy period 2Acarosan: 1.10Placebo: -0.50Control: 0.50p=not significant, actual p-value NR**Nasal IgE**Study period 1Acarosan: 0.40Placebo: 0.49Control: 1.62p=not significant, actual p-value NRStudy period 2Acarosan: 1.37Placebo: 2.62Control: -0.02p=not significant, actual p-value NR |
| Dietemann et al. 19936 | NR  | NR | **FEV1** change from baselineAcarosan: +14%Placebo: +0.08%Acarosan vs. placebo: p=not significant, actual p-value NR **FEF25-75** change from baselineAcarosan: +24.6%Placebo: +12%Acarosan vs. placebo: p=not significant, actual p-value NR **Mean morning PEFR** change from baselineAcarosan: +0.05%Placebo: -0.014%Acarosan vs. placebo: p=not significant, actual p-value NR **Mean evening PEFR** change from baselineAcarosan: +0.03%Placebo: -0.02%Acarosan vs. placebo: p=not significant, actual p-value NR  | NR | NR | **Measurement:** Member of study team collected dust samples by vacuuming mattresses, carpets, furniture; samples collected every 3 months throughout study period **Quantitative guanine** (mattress) change from baseline: Acarosan: -0.03%Placebo: -35%Acarosan vs. placebo: p=not significant, actual p-value NR**Der p 1 + Der f 1**, change from baseline:MattressAcarosan: -19.7%Placebo: -17%Acarosan vs. placebo: p=not significant, actual p-value NRCarpet Acarosan: -74%Placebo: -27%Acarosan vs. placebo: p=not significant, actual p-value NROther Acarosan: -67%Placebo: -61%Acarosan vs. placebo: p<0.05 |
| Reiser et al. 19907 | NR  | NR | **PEFR and FEV1:** Comparison of arms showed no statistically significant difference (data reported in graph)  | NR | **Measurement**: Patient diaries**Clinical symptoms:** Comparison of arms showed no statistically significant difference (data reported in graph) | **Measurement:** Member of study team collected dust samples by vacuuming mattresses; samples collected 2 times: before and after study period**Der p 1 allergen**, geometric mean difference from baseline to followup:Natamycin: 2659Placebo: 1009Natamycin vs. placebo: p=not significant, actual p-value NR |

Der f 1=*Dermatophagoides farina* house dust mite allergen; Der p 1=*Dermatophagoides* *pteronyssinus* house dust mite allergen; FEV1=forced expiratory volume in one second; NR=not reported; PC20=provocative concentration 20; PEFR=peak expiratory flow rate; SD=standard deviation; SEM=stand error of the mean