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 significant  Morning PEFR, mean (SD):  Baseline: 245 (85)  6 months: 282 (82)  Not statistically significant  Evening 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 period  HDM 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: 1.17  Acardust 6 months: 0.13  Placebo baseline: 0.94  Placebo 6 months: 0.27  Acardust vs. placebo: p=0.02  **Wheezing frequency**, mean:  Acardust baseline: 1.94  Acardust 6 months: 0.67  Placebo baseline: 2.06  Placebo 6 months: 0.73  Acardust vs. placebo: p=0.1  **Parent evaluation of severity**, mean:  Acardust baseline: 34.83  Acardust 6 months: 5.47  Placebo baseline: 29.88  Placebo 6 months: 6.60  Acardust vs. placebo: p=0.001  **Doctor evaluation of severity**, mean:  Acardust baseline: 34.56  Acardust 6 months: 4.20  Placebo baseline: 29.65  Placebo 6 months: 6.00  Acardust vs. placebo: p=0.04 | **Measurement**: Patients collected dust samples by vacuuming mattresses; samples were collected 5 times before and throughout the study period  HDM 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 1  Acarosan: -2.39 (1.53) mg/mL  Placebo: -0.07 (1.05)  Control: -5.75 (4.42)  Study period 2  Acarosan: -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 1  Acarosan: -1.41  Placebo: 0.45  Control: 9.60  p=not significant, actual p-value NR  Study period 2  Acarosan: 1.10  Placebo: -0.50  Control: 0.50  p=not significant, actual p-value NR  **Nasal IgE**  Study period 1  Acarosan: 0.40  Placebo: 0.49  Control: 1.62  p=not significant, actual p-value NR  Study period 2  Acarosan: 1.37  Placebo: 2.62  Control: -0.02  p=not significant, actual p-value NR |
| Dietemann et al. 19936 | NR | NR | **FEV1** change from baseline  Acarosan: +14%  Placebo: +0.08%  Acarosan vs. placebo: p=not significant, actual p-value NR  **FEF25-75** change from baseline  Acarosan: +24.6%  Placebo: +12%  Acarosan vs. placebo: p=not significant, actual p-value NR  **Mean morning PEFR** change from baseline  Acarosan: +0.05%  Placebo: -0.014%  Acarosan vs. placebo: p=not significant, actual p-value NR  **Mean evening PEFR** change from baseline  Acarosan: +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:  Mattress  Acarosan: -19.7%  Placebo: -17%  Acarosan vs. placebo: p=not significant, actual p-value NR  Carpet  Acarosan: -74%  Placebo: -27%  Acarosan vs. placebo: p=not significant, actual p-value NR  Other  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: 2659  Placebo: 1009  Natamycin 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