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Amelioration of Rhinovirus Type 16(RV16) Colds in Ascorbic Acid Supplemented (AA) Volunteers E.C. DICK*, K.A. MINK, D. OLANDER, P.A. SHULT, L.C. JENNINGS, S.L. INHORN.

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AA supplements have been used for the prevention and amelioration of common colds, but supporting evidence has been inconclusive. A natural transmission human volunteer model [J.I.D. 150:195(1984); 156:442(1987)] was used to study the effectiveness of AA in moderating RV16 colds in three double-blind placebo-controlled trials. In each trial, 8 AA supplemented (500 mg q.i.d.) and 8 placebo volunteers (recipients) were exposed to 8 RV16-infected volunteers (donors) for 7 days. Recipients in each trial were given supplement or placebo for 3.5 weeks prior to, during and two weeks after the exposure period. Serum and leukocyte AA levels were measured at least weekly. Other data collected included mucus weights (study 3 only) and daily logs of signs and symptoms. Two grams per day of AA clearly reduced the severity of RV16 colds. The combined data from the three trials showed a highly significant decrease in symptom severity for the AA recipients ($p<.001$, $n=48$, Fisher method of adding logs of P-values). (All subsequent P-values are based on the Wilcoxon rank sum test, $n=16$.) In trial 1, a significant decrease in coughs ($p<.05$) and in symptom severity ($p<.05$) was noted. In trial 3, there was a significant decrease in symptom severity ($p<.005$) and mucus weight ($p<.03$). In trial 2, the signs and symptoms were decreased in the AA recipients, but not significantly. For some reason, the mean AA leukocyte level in this group was much lower than in the AA supplemented recipients in trials 1 and 3; in fact, it was only slightly higher than in the trial 3 placebo recipients. The following table presents the mean leukocyte AA levels ($\mu g/10^8$ cells) for the exposure week in each trial:

	Trial 1	Trial 2	Trial 3
Placebo	20.00	20.97	31.00
Vitamin C	47.07	32.59	46.18

These three trials have demonstrated that supplementation with AA significantly decreases the severity of signs and symptoms of naturally transmitted RV16 colds; however, the results in trial 2 may indicate a threshold leukocyte AA level which must be exceeded to ameliorate RV16 colds.