

AMELIORATION OF RHINOVIRUS COLDS BY VITAMIN C (ASCORBIC ACID) SUPPLEMENTATION.**K.A. MINK, B.C. DICK, L.C. JENNINGS AND S.L. INHORN**

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The effectiveness of vitamin C supplementation in moderating or preventing common colds still remains unsettled. Major problems in earlier trials have been (a) lack of adequate control of the vitamin C status of the subjects, and (b) possible variability in the types of virus infecting the test and the control subjects. We have developed a human volunteer model whereby laboratory-induced colds caused by a single rhinovirus (RV) serotype can be spontaneously transmitted to others at a predictable rate over a one-week period. This system has the advantage of allowing nearly complete control of the small study population. In a double-blind trial, 16 men (eight control and eight test) free of RV type 16 antibody were given placebo or vitamin C supplements (500 mg x 4 daily). Prior to the treatment, mean levels of serum ascorbic acid were 0.81 and 0.80 mg/100 ml in the test and placebo groups, respectively. After 3.5 weeks, mean serum levels were 0.5 and 2.2 mg/100 ml and leucocyte levels were 17.5 and 47.9 $\mu\text{g}/10^8$ cells for the placebo and test men, respectively. At this time, these 16 men were housed for one week and engaged in supervised interactive activities with eight men infected with laboratory-induced RV16 colds. Vitamin C and placebo treatments were continued during the 7 day interaction period and the following 2 weeks. Daily logs of symptoms and signs were kept, and nasal washings for virus titration were collected daily during the interaction and following two weeks. Seven of the eight placebo but only four of the eight test men contracted RV16 colds during the interactive period. However, two of the test men started shedding the virus after they returned to freeliving. Although there was no significant difference in the virus shedding, severity of signs and symptoms were much lower in the vitamin C group. Symptoms were twice as severe ($p=0.046$; Mann-Whitney) and severity of signs, especially coughs ($p=0.0157$; Mann-Whitney), were also much greater in the placebo group. The findings suggest that vitamin C supplementation may be useful, not only for lessening the severity of the disease, but also for reducing virus transmission.

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