OBJECTIVE:

To investigate the relationship between the common cold and vitamin C supplementation.

DESIGN:

A double-blind, 5-year randomized controlled trial.

SETTING:

A village in Akita prefecture, one of the regions in Japan with the highest mortality from gastric cancer.

SUBJECTS:

Participants in annual screening programs for circulatory diseases conducted under the National Health and Welfare Services Law for the Aged, and diagnosed as having atrophic gastritis. Of the 439 eligible subjects, 144 and 161 were assigned to receive 50 or 500 mg of vitamin C, respectively, after protocol amendment. During the supplementation phase, 61 dropped out, and 244 completed the trial.

INTERVENTION:

Daily vitamin C supplementation of 50 mg (low-dose group) or 500 mg (high-dose group).

RESULTS:

Total number of common colds (per 1000 person-months) was 21.3 and 17.1 for the low- and high-dose groups, respectively. After adjustment for several factors, the relative risks (95% confidence interval (CI)) of suffering from a common cold three or more times during the survey period was 0.34 (0.12-0.97) for the high-dose group. No apparent reduction was seen for the severity and duration of the common cold.

CONCLUSION:

A randomized, controlled 5-year trial suggests that vitamin C supplementation significantly reduces the frequency of the common cold but had no apparent effect on the duration or severity of the common cold. However, considering several limitations due to protocol amendment, the findings should be interpreted with caution

**Vitamin C for preventing and treating the common cold**

The common cold is a major cause of visits to a doctor in high-income countries and of absenteeism from work and school. There are over 200 viruses which can cause the common cold symptoms including runny nose, congestion, sneezing, sore throat, cough, and sometimes headache, fever and red eyes.

Vitamin C has been proposed for treating respiratory infections since it was isolated in the 1930s. It became particularly popular in the 1970s when Nobel laureate Linus Pauling concluded from earlier placebo-controlled trials that vitamin C would prevent and alleviate the common cold.

This review is restricted to placebo-controlled trials testing 0.2 g/day or more of vitamin C. Regular ingestion of vitamin C had no effect on common cold incidence in the ordinary population, based on 29 trial comparisons involving 11,306 participants. However, regular supplementation had a modest but consistent effect in reducing the duration of common cold symptoms, which is based on 31 study comparisons with 9745 common cold episodes. In five trials with 598 participants exposed to short periods of extreme physical stress (including marathon runners and skiers) vitamin C halved the common cold risk. The published trials have not reported adverse effects of vitamin C.

Trials of high doses of vitamin C administered therapeutically, starting after the onset of symptoms, showed no consistent effect on the duration or severity of common cold symptoms. However, only a few therapeutic trials have been carried out and none have examined children, although the effect of prophylactic vitamin C has been greater in children. One large trial with adults reported benefit from an 8 g therapeutic dose at the onset of symptoms, and two therapeutic trials using five-day supplementation reported benefit. More trials are necessary to settle the possible role of therapeutic vitamin C, meaning administration immediately after the onset of symptoms