



# Gastric cancer

## How Korean Red Ginseng could have an impact on the incidence of human primary cancer



### Background



### Theory

#### The effect of Korean red ginseng (KRG) on chronic atrophic gastritis:

Previously, two case-control studies and a cohort study strongly suggested that *Panax ginseng* C.A. Meyer exerted non-organ-specific preventive effects against cancer. In the present study, the cancer preventative effect of *P. ginseng* C.A. was tested against gastric cancer, which has a high incidence rate in many Asian countries. Chronic atrophic gastritis was chosen because the risk of stomach cancer occurrence in this disease was 5.73-fold higher than that of normal individuals.



### Method

#### A randomized, double-blinded, placebo-controlled trial:

This study was performed on 643 chronic atrophic gastritis patients in China. KRG extract powder (1 g) was administered orally to each patient per week for 3 years and followed up for 8 years. The development of various cancers in the KRG subjects was compared to that of a placebo group.

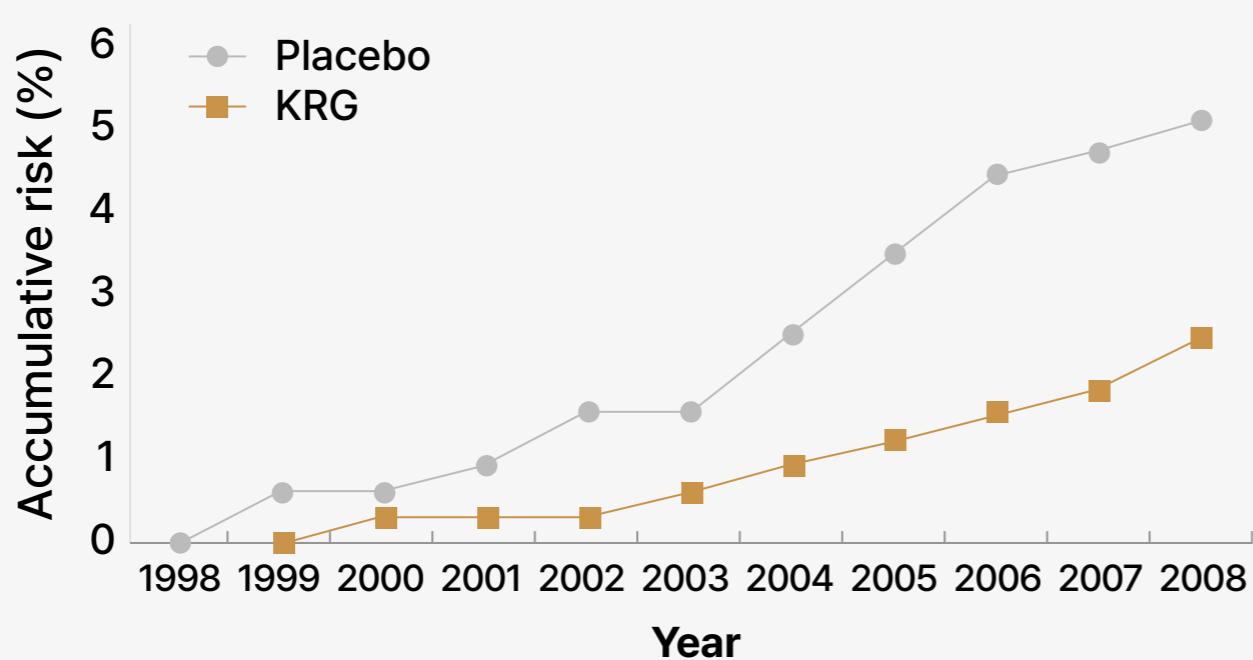


### Outcome

With 643 patients diagnosed with chronic atrophic gastritis (40-69 years old)

### Accumulative morbidity risk

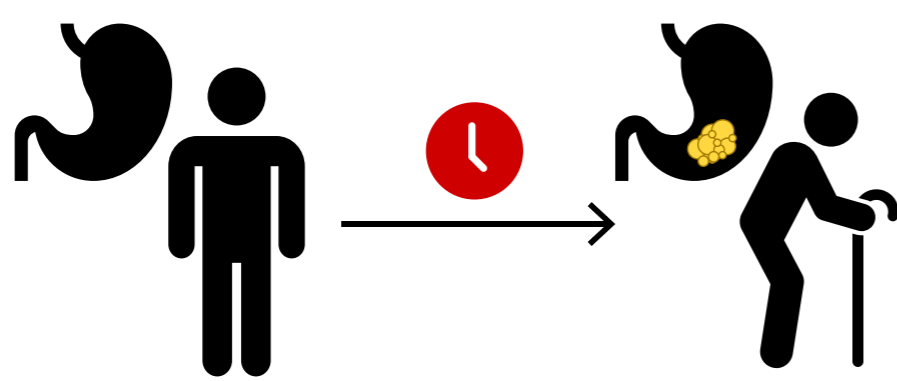
[Accumulative morbidity risk]



Accumulative morbidity risk of all cancers during the period of 1997-2008 in both groups.

[Histological diagnosis of 24 cancers]

	Number (%)	
	Placebo	KRG
Lung cancer	6 (75.0)	2 (25.0)
Stomach cancer	3 (50.0)	3 (50.0)
Liver cancer	1 (50.0)	1 (50.0)
Colorectal cancer	1 (50.0)	1 (50.0)
Nasopharyngeal cancer	1 (100.0)	0
Esophageal cancer	1 (100.0)	0
Pancreatic cancer	1 (100.0)	0
Gallbladder cancer	0	1 (100.0)
Urinary bladder cancer	1 (100.0)	0
Prostate cancer	1 (100.0)	0
Total number	16 (66.7)	8 (33.3)



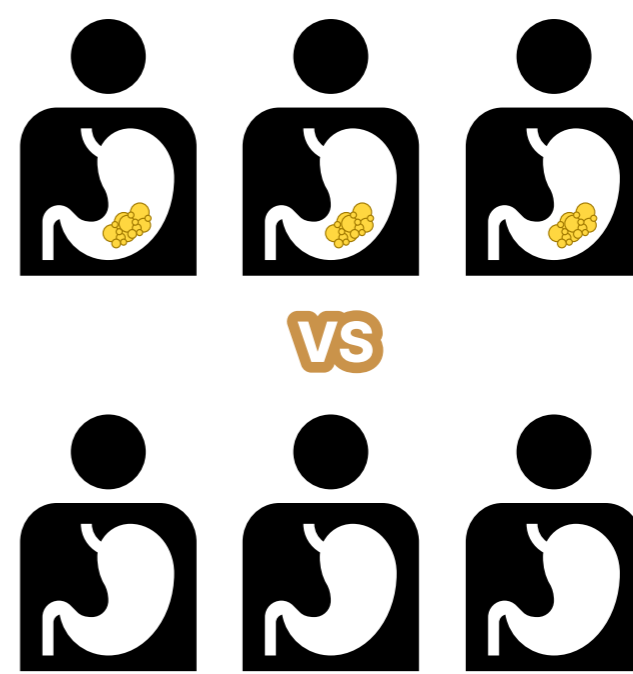
- During the 11 years of the study, 16 cancer cases occurred from the placebo group and eight from KRG group. The morbidity rates for all malignant tumors in the placebo and ginseng groups were  $247.02/10^{-5}$  and  $516.39/10^{-5}$  person-years, respectively.
- The cumulative morbidity risk was much higher in the placebo group than in the red ginseng group.

A measure of the total risk that a certain event will happen during a given period of time. In cancer research, it is the likelihood that a person who is free of a certain type of cancer will develop that cancer by a specific age.

### Relative risk

[Relative risk and 95% CI of cancer]

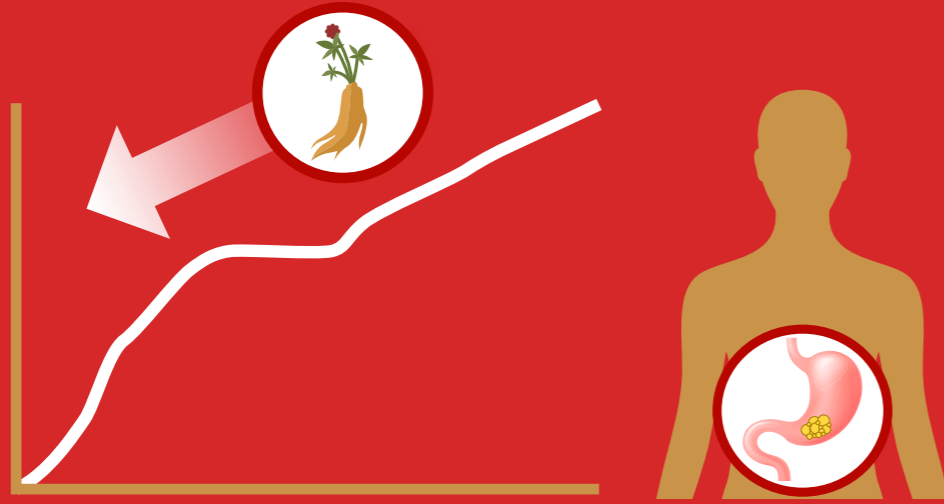
Variable	Placebo	KRG	RR	95% CI
<b>Cancer incidence in Both sexes</b>				
No	302	317	0.54	0.23-1.28
Yes	16	8		
<b>Men</b>				
No	185	188	0.35	0.13-0.96
Yes	16	5		
<b>Women</b>				
No	117	129	$6.7 \times 10^4$	0.00-∞
Yes	—	3		



The KRG group showed a decreased risk for the development of cancer (RR=0.54; 95% CI, 0.23-1.28;  $P=.13$ ) compared to the placebo group. RR was influenced by gender, as the cancer occurrence for men was significantly lower in the KRG group than in the placebo group (RR=0.35, 95% CI, 0.13-0.96;  $P=.03$ )

The relative risks (RRs) were estimated using Cox proportional hazards and logistic regression models. A relative risk of greater than one or of less than one usually means that being exposed to a certain substance or factor either increases (relative risk greater than one) or decreases (relative risk less than one) the risk of cancer, or that the treatments being compared do not have the same effects.

[Gastric cancer Prevalence rate]



### Impact



#### Effect of Korean Red Ginseng on human cancer

In the present clinical trial on chronic atrophic gastritis patients, administration of Korean red ginseng extract powder for 3 years exerted **significant preventive effects on the incidence of non-organ-specific human cancers in males.**

### Conclusion

#### The preventive effect of Korean Red Ginseng on gastric cancer

The **non-organ-specific cancer preventive effect** of Korean red ginseng was confirmed clinically **even in gastric cancer-prone patients.**