Cereal or Grain Consumption and Gastric Cancer Risk: a Systematic Review and Meta-analysis of Observational Studies

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Statistical analysis

We examined the relationship between cereal consumption and GC risk on the basis of the effect estimates and their 95%CI in each included report. Because the absolute risk of GC is low, the OR mathematically approximates the RR in case-control studies; therefore the measure of effect is OR along with 95%CI in our meta-analysis. For the pooled analysis, we used either fixed effect models when heterogeneity was low or random effect models which take heterogeneity within and between studies into account, to calculate the summary OR.

Statistical heterogeneity across studies were assessed by the Cochrane's Q test (P value <.10 being considered statistically significant for conservativeness of the test) and I^2 statistics. I^2 describes the proportion of the total variation in study estimates that is due to heterogeneity rather than chance (with I^2 >50% considered to represent potentially important statistical heterogeneity). In addition, to identify potential source of heterogeneity, we performed subgroup analysis according to study design and cereal consumption categories.

The presence of publication bias were investigated by using the Begg and Egger tests, and results were considered to indicate potential bias at P<.05. We also carried out a traditional sensitivity analysis by excluding a study at a time to explore whether the results were driven by a study with extreme result. All data analysis were conducted by using STATA software (version 12.0; StataSE). All statistical tests were two-sided.