Letters to the Editor

Lifestyle factors and stomach cancer

From SARALA KRISHNAMURTHY

Sir — Congratulations to Drs Gajalakshmi and Shanta for their fine article on lifestyle factors in stomach cancer. They focus mainly on the role of tobacco use. Their data however, also show increased risks and dose response of this usually lethal disease with dietary factors. These are, surprisingly, ignored in their text.

Table 4 shows higher risks and dose response associated with increased intake of chillies (OR 3.5, CI : 2.5-5.0), and chutney (OR 5.7, CI : 2.5-12.9); higher risks but no dose response if fried egg is included in the diet. These risks, especially of the "pungent" dietary factors (chillies and chutney) exceed those of tobacco smoking. Capsaicin (the pungency factor) in chillies is a known mutagen. Fried eggs may have higher levels of nitrosamines. Changes in oil used for frying or fumes from cooking oil may also be factors related to consumption of fried food.

It is possible, and more likely, that these dietary factors interact with, and confound tobacco smoking to some extent though use of regression techniques in the analysis may render this effect small. Controlling for tobacco smoking where the dietary factors exist and vice versa would help determine the real role of each of these independent of tobacco use. It would also be worthwhile to determine the intake and role of fresh green, yellow and red vegetables and fruits both raw and cooked, in the risks associated with this cancer to see if risks are reduced by these foods. Stratification on histological type (intestinal or diffuse) and investigating the role of H pylori would also help to assess the role of these environmental factors.

Madras (Chennai) is in Tamil Nadu, where the use of dietary hot spicy additives like chillies and chutney is more frequent than elsewhere in India except perhaps in Andhra Pradesh (whence stomach cancer incidence data are not available). The majority of patients in this study are from Tamil Nadu and Andhra Pradesh. The authors' data show dietary factors alone or in combination with tobacco smoking, more than smoking alone, would explain the higher incidence rates of this usually lethal cancer in Madras.

References


Authors' Response

From C K GAJALAKSHMI AND V SHANTA

Sir — We would like to thank Sarala Krishnamurthy for her comments on our paper. This paper focuses mainly on the role of the habits in the risk of developing stomach cancer. Hence the association between dietary factors and risk of stomach cancer was not discussed here. The role of dietary factors in the risk of stomach cancer has been dealt with in detail in the article 'Diet and Stomach Cancer: A Case-Control study in Madras, India' by CK Gajalakshmi and V Shanta. This is due for publication in the Journal of Cancer Prevention International.

Taking green vegetables in the form of salad or eating any raw vegetables is not common practice in India unlike in the West. So the data were available only on cooked food items. The variables collected for the study and the dietary analysis using univariate and multivariate methods were given adequately in the 'Methods and Materials' section of our paper. When significant dietary factors were introduced with habits in a multivariate model, the significance of drinking alcohol disappeared and the magnitude of association with smoking tobacco did not change appreciably. This indicates dietary factors are not confounding tobacco smoking but does not tell us whether or not they have an independent effect on the risk of stomach cancer. Dr Krishnamurthy suggested controlling one risk factor in the analysis to identify the independent effect of other risk factors. The independent effect of the risk factors was determined by the authors by performing in-depth analysis using computer programs to test the interaction effect between the habits and, between tobacco smoking and dietary factors given in Table 4. The analysis showed that the interaction effect was not significant at the 5% level. This shows that tobacco smoking and dietary factors (in Table 4) are independent risk factors of stomach cancer i.e. the effect of one factor (habits/dietary factors) on the risk of stomach cancer was not modified by the other.

Reference