LETTERS TO THE EDITOR

Olive oil and colorectal cancer

EDITOR,—In a recent article on diet and colorectal cancer, Stoneham *et al*¹ reported that 76% of the variation in incidence rates between 28 countries could be explained by three significant dietary factors (meat, fish, and olive oil). The authors concluded that olive oil may have a protective effect on the development of colorectal cancer. While a plausible mechanism is proposed, it is worth noting that 21 of the 28 populations included in the ecological study were essentially non-consumers of olive oil (<0.01 kg/year per capita) and the inverse association between consumption and colorectal cancer risk is therefore based on a relatively small number of influential data points (fig 1). Regional colorectal cancer rates in Italy and Spain (for example, Trieste and Mallorca) are among the highest in Europe² despite high levels of olive oil consumption, while lower rates in Greece are consistent with a diet characterised by intermediate meat and high fibre consumption.¹ The authors have demonstrated a strong positive association between meat supply and colorectal cancer risk, which persists after controlling for a range of potential dietary confounders. The association is supported by a plausible causal agent in the form of heterocyclic amines produced in the cooking of meat and fish products and shown to be both mutagenic in the standard Ames' test and carcinogenic in animal studies.³ Further studies on olive oil are clearly warranted, including research on the possible inhibition

Figure 1 Olive oil supply and colorectal cancer incidence rates (1990).

of heterocyclic amine formation by constituents in olive oil such as oleic acid⁴ and vitamin E.⁵ Nevertheless, the data presented suggest that meat consumption may be a more important determinant of colorectal cancer risk at the population level and also warrants further investigation.

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- 1 Stoneham M, Goldacre M, Seagroatt V, *et al*. Olive oil, diet and colorectal cancer: an ecological study and a hypothesis. *J Epidemiol Community Health* 2000;54:756–60.
- 2 Parkin DM, Whelan SL, Ferlay J, *et al*, eds. *Cancer incidence in five continents*. Vol VII. IARC Scientific Publications: no 143. Lyon: International Agency for Research on Cancer, 1997.
- 3 Sugimura T. Overview of carcinogenic heterocyclic amines. *Mutat Res* 1997;376:211–19.
- 4 Hayatsu H, Arimoto S, Togawa K, *et al*. Inhibitory effect of the ether extract of human feces on activities of mutagens: inhibition by oleic and linoleic acids. *Mutat Res* 1981;81:287–93.
- 5 Balogh Z, Gray JI, Gomaa EA, *et al*. Formation and inhibition of heterocyclic aromatic amines in fried ground beef patties. *Food Chem Toxicol* 2000;38:395–401.

Authors' reply

EDITOR,—We agree with Maric and Cheng that meat consumption is likely to be the most important dietary factor to be associated with rates of colorectal cancer at a population level. This association is well recognised. We did not intend our study¹ to distract attention from it but rather add information about olive oil. Nevertheless, there were some anomalies in the association between colorectal cancer and meat. For instance, we found Japan and Norway had much lower meat consumption than countries such as France, Ireland and Denmark, yet their colorectal rates were similar. Our analysis suggested that this discrepancy may be attributable to the high fish consumption in the former countries. We also found that the southern Mediterranean countries, particularly Greece, had much lower colorectal cancer rates than expected from their meat and fish consumption. Our analysis indicated these lower rates may be related to their high consumption of olive oil, more so than to their relatively high intake of fruit and vegetables. However, we recognise the limitations of this, as with all ecological studies, and consider it a hypothesis generating study, with the possible preventive effect of olive oil worthy of further research.

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- 1 Stoneham M, Goldacre M, Seagroatt V, *et al*. Olive oil, diet and colorectal cancer: an ecological study and a hypothesis. *J Epidemiol Community Health* 2000;54:756–60.

BOOK REVIEW

International law and infectious diseases. David P Fidler. (Pp 364; price not stated). Oxford: Oxford University Press, 1999. ISBN 0-19-826851-3

Infectious diseases are usually considered from the view point of the human populations affected, the diseases that are caused, and the biology of the micro-organisms. Microbiologists and epidemiologists seldom consider the political dimensions of their activities. This book outlines the ways in which international law has attempted to deal with the spread of microbial diseases. Consideration is not only in terms of international health regulations, but also of international trade law and international environmental law. There is a brief account of the history of international law in the control of infectious diseases.

In the current context of globalisation of international traveller trade, not to mention the possible emergence of bioterrorism, it is important that the role of international law is better understood. Central to the book is the concept of *microbialpolitik*. This represents a mixture of the dynamics of international relations and the special dynamic produced by the challenges produced by pathogenic microbes. In essence, this can be illustrated by considering the tension between the burden on trade and economic development resulting from health concerns and the fear of the spread of infectious diseases. Historically, this was well illustrated by cholera, but in the modern world other diseases, both animal (for example, BSE) and human (for example, HIV infection) give rise to similar concerns. Thus, we have two dynamics. Firstly, the impact of infectious disease on international relations and, secondly, the impact of international regulations on the spread and control of disease.

As globalisation accelerates, those of us concerned with the health of populations have become increasingly aware that our local concerns are set in a global context. This text provides the framework for our understanding of the ways in which international law and international health regulations can help or hinder our attempts to control the spread of infections. This is a book that departments of public health should have.

Rating: 4 star

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