

## A tribute to Dr. Frank I Tovey on his 90th birthday

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### Abstract

This paper pays a tribute to Dr. Frank I Tovey on his 90th birthday which happens on September 1, 2011, and briefly describes the major findings in his research career and contributions as follows. The geographical prevalence of duodenal ulceration is related to staple diets. Unrefined wheat and maize, soya, certain pulses and millets are associated with a low prevalence while refined wheat, maize and rice, yams, cassava and green banana with a high prevalence. Predominant foodstuffs from low prevalence areas are ulceroprotective in rat peptic ulcer models. The protective activity lies in the lipid fraction present in these foodstuffs. The lipid fraction also promotes ulcer healing, is active both orally and intramuscularly and is ulceroprotective against non-steroidal anti-inflammatory drugs (NSAIDs). The phospholipids and phytosterols present in the lipid have been identified to be responsible for this protective activity. The combination of phospholipids and phytosterols may be of value in the prevention and treatment of duodenal ulceration and protection against the ulcerogenic effect of NSAIDs.

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**Key words:** Duodenal ulceration; Staple diets; Protective factors; Phospholipids; Phytosterols; Non-steroidal anti-inflammatory drugs; *Helicobacter pylori*

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**Figure 1** Frank I Tovey, OBE, ChM, FRCS (Eng), Honorary Senior Research Associate, Department of Surgery and Interventional Science, University College London, London W1W 7EJ, United Kingdom.

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September 1st, 2011 marks the 90th birthday of Dr. Frank I Tovey, ChM, FRCS (Eng) (Figure 1).

Dr. Tovey worked as a surgeon at the Methodist Hospital in Zhaotong, Yunnan, southwest China from 1948 to 1949 and at the Holdsworth Memorial Hospital, Mysore, South India from 1951 to 1967. He was appointed OBE in 1966 for services to surgery and leprosy in India. From 1968 to 1986, he was a Consultant Surgeon in the United Kingdom at Basingstoke District Hospital and Honorary Research Fellow in the Department of Surgery, University College Hospital, London. His present appointment is Honorary Senior Research Associate, Department of Surgery and Interventional Science at University College London.

His main research interests include reconstructive surgery in leprosy, the nutritional effects of surgery for pep-

tic ulceration both in the United Kingdom and in developing countries, the relationship between the prevalence of duodenal ulceration and staple diets worldwide, and the absence of any relationship between the prevalence of duodenal ulceration and the prevalence of *Helicobacter pylori* (*H. pylori*) infection. These interests have led to a number of publications.

His interest in duodenal ulceration arose when working in Mysore in India where duodenal ulceration was a major problem particularly in men and requiring surgery. He found that partial gastrectomy was inappropriate for people living on one large meal a day because they were not able to eat enough. This led to trials of the long-term nutritional effect of different types of vagotomy and drainage procedures, which continued after his return to the United Kingdom<sup>[1-3]</sup>. He also noted that the majority of duodenal ulcer patients came from the wetlands where rice was the staple diet and very rarely from the dry areas where millets or pulses were the staple food. This suggested a relationship between staple diets and the prevalence of duodenal ulceration and led to researches which extended over 55 years. Information was gathered from all over India and confirmed a higher prevalence in rice-eating areas particularly in the South and a lower prevalence in the unrefined wheat or millet-eating drier areas in the North. In association with Denis Burkitt and the Medical Research Council, information was obtained from many countries including Africa, China and Malaysia. This was at a time when surgery was the accepted procedure for duodenal ulceration and information about the incidence of surgical procedures thus reflected its prevalence. The evidence showed a consistent pattern. A higher prevalence was found in areas where the staple diet was principally milled rice, refined wheat or maize, yams, cassava, sweet potato or green bananas, and a lower prevalence in areas where the staple diet was based on unrefined wheat or maize, soya, certain millets or certain pulses. These diets and individual foods were investigated using several rat peptic ulcer models, and the results confirmed the ulceroprotective activity of the foods predominating in the diet in the lower duodenal ulcer prevalence areas. The experiments showed that the protective activity lay in the lipid component of these foods. The lipid fraction was protective when given orally or intramuscularly, and it also promoted ulcer healing. The activity was found to lie in the phospholipid and sterol fractions of the lipid, and their nature has been subsequently identified. This combination of phospholipids and phytosterols, may prove to be of value in giving protection against not only duodenal ulceration but also the ulcerogenic effect of non-steroidal anti-inflammatory drugs<sup>[4-17]</sup>.

The geographical study of the prevalence of duodenal ulceration also showed no relationship with the prevalence of *H. pylori* infection<sup>[18-22]</sup>.

Dr. Tovey served as a member of the *World Journal of Gastroenterology* (WJG) Editorial Board for 11 years, during which he reviewed 55 articles and published 8 articles in WJG<sup>[3,13,19-24]</sup>, making a great contribution to the improvement of the academic quality of WJG.

On behalf of all the WJG Editorial Board members

and all WJG editorial staff, I would like to wish Dr. Frank I Tovey a very happy birthday!

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