Oral complications of cancer

SIR,—Dr G E Murty and colleagues are of course correct[1]—we encourage our patients to stop smoking and drinking alcohol not only during radiotherapy and chemotherapy but long term as these habits undoubtedly contribute to the development of multiple primaries in head and neck malignancy.[2] Sadly it is our experience that, although patients with bronchial carcinoma almost invariably stop smoking when the diagnosis is confirmed, few of our patients with head and neck malignancies heed the advice.

It is undoubtedly true that osteoradionecrosis is not primarily an osteomyelitis but is an ischaemic necrosis of bone which may become secondarily infected when, for example, a tooth is extracted. The technique of interseptal alveolectomy that Mr Hutchison advocates[3] seems to us to be too invasive to these compromised tissues. To close tooth sockets so as to obtain primary mucosal cover not only does interseptal bone have to be removed but also the buccal and lingual alveolar bone plates must be fractured. This in itself demands considerable healing and remodelling of an already compromised ischaemic bone. Furthermore, in our experience it is very unusual to need to extract more than a single tooth after radiotherapy in these patients. Perhaps this is because we assess the dental state before treatment and extract any doubtful teeth at that stage. We also arrange for regular dental supervision after treatment. Certainly an alveolectomy cannot be performed for single tooth sockets.

We cannot agree that presurgical loading with oxytetracycline is illogical. The reason for selecting oxytetracycline is not that it is a broad spectrum antibiotic but because it is chelated to bone and produces high concentrations within the skeleton. The rationale for presurgical loading is that we know of course that the irradiated jaws are ischaemic and so on empirical grounds alone it seems sensible to preload the area with antibiotic before surgery. As stated in our editorial we use metronidazole at the time of surgery and for the immediate postoperative period. What is certainly true is that, in our hands, this regimen has almost completely eliminated cases of symptomatic osteoradionecrosis requiring resection or reconstruction with or without hyperbaric oxygen.

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1 Murty GE, Bradley PJ, Morgan DAL, Selwyn P. Oral complications of cancer. *BMJ* 1991;**302**:848. (6 April.)
2 Carr RJ, Langdon JD. Multiple primaries in mouth cancer—the price of success. *British Journal of Oral and Maxillofacial Surgery* 1989;**27**:394-9.
3 Hutchison I. Oral complications of cancer. *BMJ* 1991;**302**:848. (6 April.)

Organ donation

SIR,—Dr M A M Salih and colleagues reported that from 1 September 1988 to 31 August 1989, of 47 families in South Wales, 29 (62%) gave permission for organ donations but that refusals by next of kin were significantly more common in families of potential donors aged 20-39.[1] The age hypothesis, described as prior, was developed during interviews with a subset of the same relatives.

Both the *BMJ* and the authors were aware that data from the 1989 confidential audit of all deaths in intensive care units in England (table) countered the Welsh hypothesis. So too do the data from the 1990 confidential audit in England and also Wales, to which the confidential audit was extended in 1990 with an estimated compliance of 88% by intensive care units.

The combined evidence does not support the data-inspired hypothesis of Dr Salih and colleagues that rate of refusals by next of kin is higher among families of potential donors aged 20-39. Despite forewarning, the editorial decision was to lay aside the weapon of statistical science, and to publish an incautious inference.

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1 Salih MAM, Harvey I, Frankels S, Coupe DJ, Webb M, Cripps HA. Potential availability of cadaver organs for transplantation. *BMJ* 1991;**302**:1053-5. (4 May.)

AUTHORS' REPLY,—Dr Gore asserts that we were provided with data from the English intensive care unit audit, which ran counter to our hypothesis. This is not the case. One set of referee's comments asserted, without supporting data, that in the English study "no heterogeneity by deceased age-group in relatives' consent" was found. Moreover, these comments were of course anonymous. We took full cognisance of the extremely thorough referees' remarks and undertook substantial revision of the article. We felt on this particular issue, however, that the anonymous and unpublished findings of a study with a significantly different method from a different geographical location should not take precedence.

More substantively, while accepting that it is not the best possible practice, we disagree with Dr Gore's implied criticism that it is epidemiologically inadmissible to test a hypothesis that has been generated from a subset of data, using the same dataset. Much of the epidemiology of acute infectious disease is of necessity founded upon this,[1] with the intensely practical impact that this may have in terms of, for example, the withdrawal of food products from the market.

Finally, we acknowledge that the findings relating to Wales presented in Dr Gore's letter support the rejection of our original hypothesis, but two issues may be relevant here. Firstly, the methodology in the two studies differs. Our findings were based on the follow up of all deaths by independent researchers. The more recent findings seem to be derived from records completed by clinical staff. The possibility of bias from excluding some cases where consent was sought must be considered. Secondly, the response rates differ. In our study we have data relating to all cadaver kidney donors in the study period whereas the new study claims only 88% compliance. It seems to us nonetheless fully in keeping with a Popperian spirit of conjecture and refutation[2] that the medical scientific community be presented with diverse evidence and make its own judgments accordingly.

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1 Palmer SR. Epidemiology in search of infectious diseases: methods in outbreak investigation. *J Epidemiol Community Health* 1989;**43**:311-4.
2 Popper K. *Conjectures and refutations*. London: Routledge and Kegan Paul, 1972.

Health check ups in middle age

SIR,—Dr Kozo Tatara and colleagues draw entirely unjustified conclusions about the relation between the use of health check ups and demand for inpatient care from the data they present.[1] The associations are for the most part weak; even if they were not, showing an association is no proof of causation. In addition, their unit of observation is a town but their conclusion relates to individuals. The extrapolation of hypotheses from one observational unit to another at a different level has been shown more than once to be flawed and is known as the ecological fallacy.[2]

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1 Tatara K, Shinsho F, Suzuki M, Takatorige T, Nakanishi N, Kuroda K. Relation between use of health check ups starting in middle age and demand for inpatient care by elderly people in Japan. *BMJ* 1991;**302**:615-8. (16 March.)
2 Piantadosi S, Byar DP, Green SB. The ecological fallacy. *Am J Epidemiol* 1988;**127**:893-904.

AUTHOR'S REPLY,—I agree with Professors M G Marmot and A Haines in their prediction that "health authorities will be responsible not simply for health care but for the health of their populations."[1] Our paper tried to show the effects of health services carried out by local authorities to promote the health of the residents in that area.[2]

The finding of a correlation cannot prove a cause and effect relationship. To avoid the problem of confounding we examined changes over the years. Our results suggest that there is some kind of relation between rates of use of health check ups starting in middle age and demand for inpatient care by elderly people. In 14 of the 505 cities the rate of use was ≥60% in 1983, and data from these cities showed significant correlation between increased use of check ups and reduced use of inpatient services by elderly people. Local authorities in Japan were already accepting much responsibility for the health of their residents some years ago.

Health check ups themselves do not directly improve the health of individuals. However, high rates of use of health check ups coupled with health education and counselling make possible the early detection of diseases in many, and when services

Confidential audit of all deaths in intensive care units: relatives' consent by age groups in deceased potential donor (confirmed brain stem death and no general medical contraindications to organ donation)

	England						Wales					
	1989		1990		Combined		Salih *et al*		1990		Combined	
Families	No of families asked	No (%) giving consent	No of families asked	No (%) giving consent	No of families asked	No (%) giving consent	No of families asked	No (%) giving consent	No of families asked	No (%) giving consent	No of families asked	No (%) giving consent
0-19	227	154 (68)	206	140 (68)	433	294 (68)	10	8 (80)	8	4 (50)	18	12 (67)
20-39	322	250 (78)	284	191 (67)	606	441 (73)	21	8 (38)	15	11 (73)	36	19 (53)
40-69	384	258 (67)	386	266 (69)	770	524 (68)	16	13 (81)	26	16 (62)	42	29 (69)
Total	933	662 (71)	876	597 (68)	1809	1259 (70)	47	29 (62)	49	31 (63)	96	60 (63)