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Managing halitosis

Thorough history and examination are important

EDITOR,—Crispian Scully and colleagues' editorial describes oral and dental causes of halitosis and their treatment.[1] It is important to emphasise that a thorough history and clinical examination must be undertaken. This must include examination of the nose, postnasal space, and all mucosal surfaces of the pharynx in addition to complete examination of the oral cavity and dentition.

Halitosis may be a presenting complaint of infection, inflammation, or malignancy of any part of the upper aerodigestive tract, and delay in diagnosis may adversely affect prognosis. Early oral and oropharyngeal carcinomas, in particular, have few symptoms,[2] and clinicians must be vigilant in their examination to avoid diagnostic delay. It is dangerous to assume that halitosis is solely due to dental, periodontal, or dietary causes.

The authors overlook the fact that management of halitosis must be tailored to its precise cause and may include surgery—for example, antral washouts, adenoidectomy, tonsillectomy,[3] biopsy, and definitive treatment of any lesions.

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Remember the tongue

EDITOR,—Crispian Scully and colleagues do not adequately address the role of the tongue in halitosis.[1] In particular, they do not mention any specific measures—either brushing or scraping—to "clean" the tongue.

In the mouth the greatest number of micro-organisms is found on the tongue; the microbial flora is diverse, including spirochaetes and motile rods implicated in halitosis,[1] and other organisms that may contribute, such as *Actinobacillus actinomycetemcomitans*,[2] *Staphylococcus aureus*,[3] and candida. Tooth brushing and the use of dental floss and various mouth rinses will improve oral hygiene and halitosis, but the improvement is likely to be limited as these measures have minimal effect on the tongue flora.

Tamamoto *et al* showed that tongue brushing decreases the number of organisms not only on the tongue but also in other areas of the mouth.[4] They also found a decrease in candida under the dentures of edentulous patients. Yaegaki and Sanada showed that volatile sulphur compounds, which are thought to be partly responsible for halitosis, were reduced to over half their normal levels simply by removal of the tongue coating.[5] They concluded that the tongue was an important source of volatile sulphur.

Hence tongue cleaning is vitally important as an adjunct in the treatment of halitosis. In India "tongue scrapers" made of plastic or metal are widely used. Their primary aim is to clean the dorsal surface of the tongue by scraping the tongue, thus removing superficial bacteria, dead cells, and foreign debris. The procedure is atraumatic and pain free.

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Compliance in screening programmes

High compliance essential in cervical screening programme . . .

EDITOR,—D J Torgerson and Cam Donaldson argue that the costs of achieving a high degree of compliance represent a lost opportunity for screening an alternative target population, as might be obtained by reducing the screening interval or screening older patients.[1] They conclude that committing resources to increasing compliance may not be the most cost effective method of arriving at an overall reduction in mortality and that screening programmes can be efficient with low levels of compliance. This does not seem to be the case with screening for cervical cancer.

Even in an established programme of screening for cervical cancer a high proportion of cases of invasive cancer arises in unscreened women.[2] Several studies have shown that alternative management schedules for women with abnormalities on smear testing alter only slightly the occurrence of invasive cancer among the women being followed up.[3,4] Using a stochastic model of the natural course of precancer and its detection by different investigations we have shown that increasing compliance is by far the most effective method of reducing the overall incidence of cervical cancer and that reducing the screening interval or changing the investigative policy are relatively ineffective.[5]

We have estimated that, with a screening interval of three years, increasing compliance from 70% to 80% leads to a reduction in the incidence of cervical cancer from 2·1 to 1·6 cases per 10 000 women aged 18 and above. This requires an increase of only 260 in the annual number of smear tests and 2·4 in the annual number of colposcopies per 10 000 adult women. On the other hand, if compliance remains fixed at 70% and the screening interval is reduced to one year the incidence of cervical cancer reduces only from 2·1 to 1·9 cases per 10 000 adult women. This requires an increase of 3240 in the annual number of smear tests and 9·3 in the annual number of colposcopies per 10 000 adult women. Assuming three yearly screening and 70% coverage, changing the management of mildly abnormal smears to immediate colposcopy rather than repeat cytology reduces the incidence of cervical cancer from 2·1 to 2·0 cases per 10 000 adult women. This would be associated with a reduction of 42 in the annual number of smear tests but at the cost of an increase of 29·6 in the annual number of colposcopies per 10 000 adult women.

While agreeing that the cost of increasing compliance needs to be considered carefully, we argue that, for screening for cervical cancer, substantial improvement on existing practice can be achieved only with high compliance.

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. . . and in breast screening programme

EDITOR,—Using the NHS breast screening programme as a case study, D J Torgerson and Cam Donaldson argue that compliance should not be used as an objective for a screening programme.[1] The target of the breast screening programme, within the *Health of the Nation* strategy, is to reduce mortality from breast cancer in the target age group by 25% by 2000.[2] The calculations concerning benefit have been based on the premise that 70% of the population will be covered by the screening programme.[3] Any reduction in mortality will reflect the activity of some years before, and therefore several proxy measures are used, including a target compliance rate of 70%.

The NHS breast screening programme is publicly funded. In making decisions on competing priorities the Department of Health has had to consider value for money on a population basis rather than for individual people. A reduction in mortality of only 15% based on 45% compliance, as suggested by Torgerson and Donaldson, would not have been important enough for the breast screening programme to be commissioned. Thus in the real world compliance is a target from the outset.

Value for money must be considered in terms of use of resources. The breast screening programme, in common with other technological aspects of the NHS, has necessitated considerable investment in both equipment and staff training. The return on this investment must be maximised: the largest possible proportion of the population should benefit, and expensive equipment and staff should not be idle. These overhead costs must be taken into account.

The authors describe the rising costs of increasing compliance. These are acknowledged. As non-attenders are often concentrated in certain definable sectors of the population, however, the ethical question of equity in a public health programme must be considered. Efforts must be made, at reasonable cost, to reach all sectors of the community.

Finally we should like to point out that the NHS breast screening programme is not restricted to invited women aged 50 to 64, although this is the target group for which a compliance objective exists. Screening is also available to women aged 65

and over at their request or that of their general practitioner.

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Anticoagulation in patients with atrial fibrillation

EDITOR,—We were pleased that our brief paper[1] on anticoagulation and atrial fibrillation generated considerable correspondence.[2] Many of the points raised were dealt with in the longer paper that we submitted initially, but this was reduced to a short report. Clearly, the point that Saad M B Rassam makes about the validity of the trial results[2] applies to all well controlled clinical studies in which participants are highly screened and closely followed up, as they were in the five trials of anticoagulation in atrial fibrillation.[3-7] This does not, however, negate the importance of the trial results.[8] No therapeutic progress would ever be made if we adopted such extreme views.

We were interested to learn that our finding of a low rate of anticoagulant treatment in patients with atrial fibrillation has been duplicated in general practice[2] and in another hospital.[2] Clearly, purchasers should focus on this in the important attempts now being made to reduce the number of strokes that occur in the community.

The question of age and treatment is always contentious.[2] The trials contained only a few subjects aged over 80 and hence do not give a clear answer on whether treating people with atrial fibrillation in this age group is beneficial. Although there is no obvious reason why they should not benefit, the risks of anticoagulation are greater in older patients. For instance, patients aged over 80 who are receiving anticoagulation have an 8·5-fold increase in the risk of major bleeding compared with subjects aged under 60.[9] Another study suggests that the annual risk of cerebral haemorrhage in 80 year olds taking warfarin is 2-3%, which is only just below the expected benefit of anticoagulation in reducing stroke.[10]

We agree that age is not an absolute contraindication, but we think that considerable caution should be exercised in prescribing warfarin to patients aged over 80 until further studies (including a meta-analysis of the five trials) describe adequately the ratio of risk to benefit for this intervention.

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Gangliosides and the Guillain-Barré syndrome

No causal link

EDITOR,—Gianluca Landi and colleagues report that 25 cases of the Guillain-Barré syndrome after treatment with gangliosides were seen over four and a half years in Italy, a yearly average of 5·6 cases.[1] Their conclusion that these cases represent an excess incidence is incorrect. Their data estimate a yearly exposed population of roughly 2 500 000 (4·2% of the Italian population). The 5·6 cases represent a yearly incidence of 0·2/100 000. Eleven of their patients were over 60. The incidence of the Guillain-Barré syndrome is known to be higher in older age groups: an incidence of 3·2/100 000 a year has been reported in people over 60.[2]

We believe that it is inappropriate to compare the incidence of the Guillain-Barré syndrome in the normal population with that in patients selected for treatment with gangliosides—that is, patients with neuropathy—as the frequency of the syndrome seems to be increased in these patients. This is exemplified by surveys of referrals for generically defined neuropathy[3,4]: on accurate examination 11-12% of the cases were diagnosed as cases of the Guillain-Barré syndrome. The syndrome may therefore be diagnosed in over 10% of patients with neuropathy (especially elderly patients), who potentially qualify for ganglioside treatment.

The authors have not exluded the possibility that gangliosides were prescribed for initial signs of a peripheral nerve disorder which was later identified as the Guillain-Barré syndrome. This would have introduced appreciable protopathic bias. More than half of the diagnoses recorded in patients receiving ganglioside treatment are compatible with early signs of the syndrome: distal paresthesia and sciatic pain, as well as facial nerve involvement, occur early in a considerable proportion of patients, and some patients experience a preceding episode of low back pain.

If treatment with gangliosides was an important aetiological factor in the pathogenesis of the Guillain-Barré syndrome the extensive use of these drugs in Italy should have influenced the incidence of the syndrome; this has not been recorded. The alleged risk of ganglioside treatment can be investigated only in well designed epidemiological surveys, such as Granieri *et al*'s cohort study, which did not identify the Guillain-Barré syndrome in over 13 000 patients exposed to the drugs.[5]

With regard to the therapeutic efficacy of gangliosides, several reports have described measurable effects of ganglioside treatment in controlled clinical trials in well defined disorders of the peripheral and central nervous system.

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Apparant association is a coincidence

EDITOR,—Gianluca Landi and colleagues report the use of gangliosides and a series of 24 related cases of the Guillain-Barré syndrome in Italy between January 1989 and July 1993. I wish to provide further data on the alleged association between gangliosides and the syndrome.

In deriving the number of cases of the disease that would be expected to occur in chronological coincidence with use of the drug under the hypothesis of no association, the following should be considered. Firstly, both administration of gangliosides [2] and the incidence of the Guillain-Barré syndrome[3] increase rapidly with age. Therefore, computations should be based on age specific incidences. Secondly, since the alleged association is postulated to have an immune mechanism[4] the period at risk can reasonably be restricted to one month after use of gangliosides.[4,5] In addition, as subjects may receive more than one therapeutic cycle during a given year it is appropriate to count each therapeutic cycle as the unit of exposure.

To compute the number of chronological coincidences expected to occur by chance alone I derived the age specific frequencies of therapeutic cycles of gangliosides (both mixtures and monosialoganglioside GM-1) for the entire Italian population from data for the years 1989-93.[2] To them I applied the age specific incidences of the Guillain-Barré syndrome from two studies conducted respectively in Ferrara, Italy,[3] and Olmsted County, Minnesota, United States.[5] Because of the assumption of one month at risk after each exposure the average monthly incidence of the syndrome, obtained by dividing the annual figure by 12, was used (table). From January 1989 to November 1993 the total number of expected drug-disease coincidences was 24 with the figures for Ferrara and 35 with the figures for Olmsted County. The 24 cases of the Guillain-Barré syndrome in patients treated with gangliosides reported by Landi and colleagues were therefore equal to or lower than the number expected.

Although the numbers of treatment cycles used in these calculations is approximate and the case finding procedure followed by Landi and colleagues is hampered by many biases, their data do not suggest an association between use of gangliosides and the Guillain-Barré syndrome.

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