

their experience of the acid barium swallow in 350 patients; the test was negative in only 9% of the patients who had heartburn or regurgitation. In the study reported by Dr. Sladen and his colleagues the acid perfusion test was negative in 5 out of 19 patients with typical symptoms of oesophagitis, and it may well be that the more cumbersome acid perfusion test has little or no advantage over a carefully conducted acid barium swallow, which takes only 10 minutes at the end of a barium-meal examination. A direct comparison between these two techniques would be valuable. The retrospective use of routine radiographs in this study was disappointing and the incidence of radiological reflux given is meaningless without more details. The prone or semiprone position quoted (but not necessarily used on all these patients) will demonstrate hiatus hernia readily, especially if a bolster is used, but since air and not barium lies against the cardia in this position it is not the most sensitive method of eliciting reflux. The use of radiology in endoscopic trials demands the active involvement of a radiologist from the start so that the x-ray examination may be tailored to answer the specific diagnostic questions relevant to the trial. Moreover, in one paper comparing endoscopy and radiology in the postoperative stomach using retrospective analysis of routine barium meals⁴ 10 out of 22 erroneous reports were corrected on review of the films by radiologists interested in gastrointestinal disease.

In the future, if the indications for radiology and endoscopy are to be accurately defined and both techniques used to maximum advantage it will be necessary to have much closer co-operation between endoscopists and radiologists in planning studies like the one reported.—I am, etc.,

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- 1 Kobayashi, S., and Kasugai, T., *American Journal of Digestive Diseases*, 1974, 19, 345.
- 2 Donner, M., et al., *Radiology*, 1966, 87, 220.
- 3 McCall, L., Davies, E. R., and Delahunty, J. E., *British Journal of Radiology*, 1973, 46, 578.
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Epidodophyllotoxin VP 16213 in Acute Non-lymphoblastic Leukaemia

SIR,—It has recently been reported that the bone marrow of people with acute non-lymphoblastic leukaemia may contain a meaningful number of monocytoid precursor cells.¹ We have documented a significant response to epidodophyllotoxin VP 16213 in 47% of our patients with extensive diffuse histiocytic lymphoma,² while it has been reported that four out of eight patients with acute monocytoid leukaemia experienced complete remission with administration of this agent.³

Earlier personal experience in treating individuals with acute non-lymphoblastic leukaemia using rubidomycin and cytosine arabinoside established that, when induction of remission was achieved, an average of four courses was required. In each course a single injection of rubidomycin (1.5 mg/kg body weight) and five daily intravenous injections of cytosine arabinoside (2.0 mg/kg) were administered. This was followed by a rest period of five days,

after which the course was repeated unless the patient had entered remission.⁴

Results in two patients with leukaemia suggested a possible role for epidodophyllotoxin in the induction regimen. These particular cases are of interest since both received the induction regimen described above and went on to develop peripheral pancytopenia accompanied by the persistence of marrow disease. Significantly, whereas typical myeloblasts had initially dominated the picture, the primitive cells were now more obviously monocytoid. The addition of epidodophyllotoxin at this time resulted in complete morphological clearing of the marrow and the return of the peripheral blood count to normal.

In a pilot study 16 patients have been treated with a continuous infusion of cytosine arabinoside in a dosage of 2.0 mg/kg body weight every 24 hours and have received simultaneously a daily intravenous injection of 60 mg/m² epidodophyllotoxin and 40 mg/m² adriamycin on day 6. Of these patients, eight (50%) failed to respond, and as seven of this group died within two weeks they are difficult to evaluate. The remaining eight (50%) achieved complete remission—two within three courses, a further two within two courses, and the remaining four following only a single course. It is this reduction in the time needed to obtain remission that is of interest.

Though these results are entirely preliminary and based on a very small number of observations with only short follow-up, they are reported in order to draw attention to the possible value of adding epidodophyllotoxin to the induction regimens of patients with acute non-lymphoblastic leukaemia. A controlled prospective trial is now in progress to try to confirm these early data and to define statistically the incidence and duration of complete remission that may attend the use of this regimen. We would be interested to hear of other experiences with similar programmes.—We are, etc.,

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We thank Sandoz Ltd., for supplying the epidodophyllotoxin VP 16213.

- 1 Glick, A. D., and Horn, R. G., *British Journal of Haematology*, 1974, 26, 395.
- 2 Jacobs, P., King, H. S., and Sealy, R., *South African Journal of Medicine*. In press.
- 3 European Organization for Research in the Treatment of Cancer, *British Medical Journal*, 1973, 3, 199.
- 4 Crowther, D., et al., *British Medical Journal*, 1973, 1, 131.

Economies in the N.H.S.

SIR,—There is much interest in the costs of providing a health service and in how economies can be made without reducing standards. Dr. H. P. Hughes (5 October, p. 41) and Dr. M. C. Connell (2 November, p. 291) raised the question of unnecessary x-ray examinations in casualty departments, and Dr. J. L. Taylor (16 November, p. 406) emphasized the need for an adequate history in deciding whether to request an x-ray.

During five weeks in June and July 1966, while working as a casualty officer in a general hospital in an industrial town, I sent 401 patients for radiography to exclude fractures or dislocations. Sixteen of them had more than one injury, so a total of 421 injured parts were x-rayed. I made a note of whether I thought on clinical grounds that there was a bone injury. My diagnosis was later related to the radiological diagnosis. The 421 injuries fell into three groups: clinically negative, 181 (43%); clinically doubtful, 191 (45%); and clinically positive, 49 (12%).

Each of these groups was subdivided according to the x-ray results, assessed by the casualty officer's interpretation at the time and the radiologist's report afterwards. The casualty officer's and the radiologist's independent initial interpretations differed in 31 cases (7%). Of the 181 injuries in the clinically negative group 152 (85%) were radiologically negative, 11 (6%) were radiologically doubtful, and 18 (10%) were radiologically positive. Of the 191 injuries in the clinically doubtful group 111 (58%) were radiologically negative, 15 (8%) were radiologically doubtful, and 65 (34%) were radiologically positive. Of the 49 injuries in the clinically positive group 4 (8%) were radiologically negative, five (10%) were radiologically doubtful, and 40 (82%) were radiologically positive. Of the 421 injuries x-rayed 101 were in children under 14 years old. These gave very similar results when analysed separately.

The cases of special interest are those which were clinically negative but x-ray showed some bone injury. These numbered 18, which is 10% of the clinically negative group and 4% of the total. Of these 18 seven were in children. None of the injuries was such as would have caused danger or serious disability if undetected.

The x-ray results were also analysed according to whether the patient had come directly to the casualty department (197), had been referred by a nurse or doctor (99), or had been referred by a nurse or doctor with specific mention or strong implication in the referral letter of a need for x-ray examination (125). On analysis by x-ray results these three groups gave remarkably similar results, and the lack of any difference between the direct attenders and those referred with a specific suggestion of x-ray examination was unexpected and interesting.

These figures from nine years ago suggest that x-ray examinations were being done unnecessarily. The recent correspondence in your columns suggests that this may still be the case.—I am, etc.,

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Visual Evoked Potentials and Transient Ischaemic Attacks

SIR,—The letter from Dr. L. Bergström and others (11 January, p. 93) is of considerable interest to us. We have just completed a series of recordings of both somatosensory and visual evoked potentials from 200 consecutive patients admitted to the neurological or neurosurgical unit for investigation of a suspected intracranial lesion and from 50 "normal" subjects. Though the analysis of the results is not complete, we