Correspondence

Non-steroidal anti-inflammatory drugs and peptic ulcer perforation

SIR,—We read with great interest the recent article by D St J Collier and J A Pain.¹ We have recently completed a retrospective study of 304 emergency admissions for peptic ulcer disease and found an incidence of NSAID ingestion of 29% in perforated gastric ulcer and 16% in perforated duodenal ulcer. While it may simply reflect the differences in the populations studied we are surprised by the high percentage of perforated duodenal ulcers taking NSAID's in their survey, 32% in comparison with 44% in perforated gastric ulcer. Our figures are in agreement with recently published data, Glarborg Jørgensen² who quote 13% for perforated duodenal ulcer and 31% for perforated gastric ulcer. In both these studies^{1 2} in agreement with our own work the incidence of NSAID intake in perforated gastric ulcer is higher than in perforated duodenal ulcer. In view of this we feel it is wrong to consider perforated peptic ulcer over the age of 65 as a single group and we would be interested to know if removal of the gastric ulcers from their study influences the statistical significance of their results.

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References

- 1 Collier DStJ, Pain JA. Non-steroidal anti-inflammatory drugs and peptic ulcer perforation. *Gut* 1985; **26**: 359–63.
- 2 Glarborg Jørgensen T. Drug consumption before perforation of a peptic ulcer. *Br J Surg* 1977; **64**: 247–9.

Reply

SIR,—We are pleased to be given the opportunity to reply to the letter by Smedley and Hickish. The removal of patients with a perforated gastric ulcer does not influence the statistical significance of our results (Table).

Whilst the disparity in the percentages of patients taking NSAID between our study¹ and those of Smedley and Hickish may be because of studying different population groups, another explanation may be the methodology of data collection. In Glarborg Jørgensen's² prospective study >80% of patients with a perforated peptic ulcer were taking NSAID. Furthermore in a study of patients with

upper gastrointestinal bleeding Haglund *et al*³ found that on retrospective note review 38% of patients were taking NSAID before admission. When the same group of patients were later interviewed, however, it was revealed that 71% had taken NSAID.

Table Ingestion of NSAID in patients with perforated duodenal ulcers (DU) compared with age/sex matched controls for specified age groups

	Taking NSAID	No NSAID	Total
Under 65*			
Controls	5	84	89
Patients with perforated DU	11	78	89
Total	16	162	178
Over 65†			
Controls	10	118	128
Patients with perforated DU	58	70	128
Total	68	188	256

* $\chi^2=2.47$; DF=1; $p<0.5$ NS with Yates's correction.

† $\chi^2=46.13$; DF=1; $p<0.001$.

The diligence with which note review is done must influence the results, and all retrospective studies will to varying degrees underestimate the true incidence of NSAID ingestion.

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References

- 1 Collier DStJ, Pin JA. Non-steroidal anti-inflammatory drugs and peptic ulcer perforation. *Gut* 1985; **26**: 359–63.
- 2 Glarborg Jørgensen T. Drug consumption before perforation of peptic ulcer. *Br J Surg* 1977; **64**: 247–9.
- 3 Haglund U, Frost L, Wiholm BE. An evaluation of the frequency of anti-inflammatory and analgesic drug intake among patients with acute gastrointestinal bleeding. *Proceedings 2nd international conference of side-effects of anti-inflammatory analgesic drugs*. Cambridge, August 1985.

Appropriate statistical test in comparative ulcer healing studies

SIR,—Boyd and Marks' in their letter state that the statistical method used by Lam *et al*,² namely, a χ^2 -test (without Yates' correction), is inappropriate for the analysis of their data.

For many years there has been some controversy in the statistical literature as to whether Yates'