low. It is difficult to know what the second figure "1 in 450 000 to 1 in 1 800 000" is intended to denote. It is presumably meant to imply that the average size of population expected to include nine such patients is 450 000-1 800 000. This figure is probably too high but in any case the total population from which the nine patients were ascertained is undefined and presumably unknown. The probability that the size of this population falls within 95% confidence limits of the above estimate is likely to be quite high. Moreover, three specialised rheumatological centres were involved so that the likelihood of biased ascertainment is considerable.

Among 104 successive men with ankylosing spondylitis ascertained here, one has seropositive peripheral erosive polyarthritis with a rheumatoid olecranon nodule, his HLA typing including B27. The prevalence of this grade of rheumatoid arthritis is 1% in males.[4]

We therefore interpret the evidence as providing no support for a non-random association of the two diseases and indeed it would be surprising and even more interesting if such cases were *not* encountered. All the present clinical, immunological, and genetic evidence points to the likelihood that there is no aetiological connection between rheumatoid arthritis and ankylosing spondylitis.

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Aplastic anaemia and hair dye

SIR,—The anecdotal report by Drs P J Toghill and R G Wilcox (28 February, p 502) implies a relationship between the occurrence of aplastic anaemia and use of a hair dye. The authors reported prior exposure of the patient to oxytetracycline and penicillin but state that it is unlikely that either antibiotic caused the patient's aplastic anaemia. Aplastic anaemia has been recorded in conjunction with use of tetracycline, chlortetracycline, demethyl chlortetracycline, and doxycycline as well as phenoxymethyl penicillin, cloxacillin, and ampicillin.[1] Attention is drawn to the risk of thrombocytopenia and neutropenia in connection with use of oxytetracycline,[2] and a fatal case of aplastic anaemia possibly due to oxytetracycline has been described.[3]

Three publications dealing with long-term exposure of mice,[4] rats,[5] and dogs[6] to hair dyes give no indication of deleterious effects on bone marrow or peripheral blood elements. Data from current industry studies,[7] which include *para*-toluenediamine at a concentration as high as 6% and both nitrophenylenediamines, show no evidence of toxic effects of these or any other hair dyes on bone marrow. Most of these data were discussed by Burnett at the 1975 meeting of the European Cancer Society in Nottingham.

Karch and Lasagna[8] emphasise the difficulties in relating specific untoward events to drugs. They categorise adverse drug reactions into definite, probable, conditional, and doubtful subgroups. In the light of the data referred to above one is forced to conclude, using these definitions, that the fatal case of aplastic anaemia described by Drs Toghill and Wilcox was probably if not definitely due to either oxytetracycline or penicillin and that it is doubtful that the hair dye in question was causal. Moreover, since 20% of women in the United Kingdom are current users of hair colouring products (and many more have used these products at some time) one would expect to find a history of hair colour usage clearly associated with several cases of a disease before drawing any conclusion. Thus I would support Drs Toghill and Wilcox's plea for careful questioning and continuing inquiry in the case of any unusual phenomenon.

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Spasmolytics for postoperative bowel contractions

SIR,—I am grateful to Dr J W H Watt for his comments and suggestions (10 April, p 901) concerning our letter about hyoscine butylbromide used as a spasmolytic for postoperative bowel contractions (13 March, p 646). I agree that a torn suture line directly due to prostigmine is probably not a common complication of bowel anastomosis, so any remedy must carry a low risk to the patient. One of the drugs that Dr Watt suggests, papaverine, does not do this.

About 20 years ago, and for other reasons, I used intravenous papaverine in doses of 10-40 mg during general anaesthesia but encountered the following complications. Tracheal intubation was more difficult because of failure of pharyngeal and laryngeal muscles to relax even with suxamethonium, haemorrhage was considerably increased, abdominal exposure and closure of the peritoneum were made more difficult because of an apparent failure of the transverse muscles of the abdomen to relax, and reactionary haemorrhage and haematomas were common.

These effects were reduced but not abolished by intramuscular injection. It would seem that despite its theoretical advantages papaverine should not be used as an intestinal spasmolytic after abdominal surgery.

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Assessment of results of surgery

SIR,—Patients' assessment of their symptoms by linear analogue techniques, although appropriate in some situations, such as the assessment of postoperative pain, is not a suitable instrument in the outpatient clinic as described by Mr R Hall and others (3 April, p 814).

In this study patients were asked to rate their own postoperative status on a linear scale ranging from "awful" to "perfect." There are intrinsic biases in this: (1) patients find it difficult to admit that an operation has done them harm because this implies blame on their surgeon; (2) it allows patients to please the surgeon by stating their condition to be "perfect." These biases may be sufficient to explain the tendency of patients who have suffered less than perfect operations to class the result as perfect.

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Iatrogenic gall stones

SIR,—I must take issue with your leading article on this subject (10 April, p 859). You infer that risk of gall stones should make the physician wary of prescribing oral contraceptives. By means of our feature card morbidity recording system I have determined that of the 9000 patients in this practice 474 are on oral contraceptives and not one of these presented with gall stones during the year ending 1 March 1976. Many of these women have been on the pill for more than 10 years.

As you state, "other methods for preventing pregnancy are available," but none combines the merits of effectiveness, reversibility, and convenience. A good deal more evidence than exists at present of risk of gall stones will need to be produced before sexually active women whose family is not yet complete should be denied the peace of mind which the pill usually brings.

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Metronidazole in treatment of empyema

SIR,—Little information is available at present on the penetration of systemic antibiotics into empyemas and we can find no reference on metronidazole in this context. This is perhaps surprising as in one recent study of 83 patients anaerobic bacteria were recovered from 76% of cases (these were the exclusive isolates in 35%)[1] and metronidazole has been increasingly recognised for its role in dealing with anaerobic organisms.[2] Being a relatively non-toxic antibiotic, well absorbed when given by mouth, we feel its use in empyemas is worthy of consideration. We would like to report our experience with this drug.

An 81-year-old man was admitted with right middle lobe pneumonitis. He subsequently developed a right-sided empyema which was drained with an intercostal tube. An anaerobic bacteroides organism particularly sensitive to metronidazole and also to clindamycin was cultured from the pus. Metronidazole 400 mg and clindamycin 300 mg were given orally six-hourly and the patient made a good recovery. A sample from the intercostal drain taken 3½ days after starting this regimen showed a metronidazole concentration of 24·2 μg/ml. The minimum inhibitory and bactericidal concentrations of metronidazole against *Bacteroides fragilis* isolated from clinical material, as determined by Whelan and Hale,[3] were almost identical in several types of