not cloud the clinical fact that the intelligent use of CAT technology could make it sufficiently simple for those responsible for the care of these patients to treat them effectively and reduce the mortality to nearer 5%.

The case for a wider deployment and more open access to CAT scanning for the care of the injured merits serious attention.

JOHN R BARTLETT
G NEIL-DWYER

Regional Neurosurgical Unit,
Brooke General Hospital,
London SE18 4CW

Non-specific genital infection

SIR,—Your leading article on non-specific genital infection (21 July, p 161) contains a number of controversial and misleading statements which should not go unchallenged.

Postgonococcal urethritis does not have a satisfactory definition and many reports of its incidence fail to state the diagnostic criteria applied. In particular, how soon after treatment for gonorrhoea may it be diagnosed and what is the natural history of the condition in the absence of *Chlamydia trachomatis*? The high incidence quoted is an estimate derived by equating proportions in the national annual figures, but nowhere does the author claim that "about half the men [with gonorrhoea] will be found to have non-specific infection." The usual figure for postgonococcal urethritis is nearer 10%.¹ Isolation of *C. trachomatis* in non-specific urethritis occurs in around 40% of cases according to the current literature, not in "at least half."^{2,3}

The need to treat patients for 14 days, as opposed to seven days, has not been established in any properly conducted trial, let alone the need to give similar treatment to consorts. It is to be hoped that no clinician would postpone treatment (with erythromycin) until after delivery with such well-documented neonatal complications as ophthalmia and pneumonia. As regards pelvic inflammatory disease, it should be stated that the work cited was based on chlamydial antibody titres and not on isolation of the organism, which appears from the paper not to have been attempted despite laparoscopy.⁴

B A EVANS

West London Hospital,
London W6 7DQ

¹ Willcox, R R, *British Journal of Venereal Diseases*, 1979, 55, 149.

² Morton, R S, *Gonorrhoea*. London, W B Saunders, 1977.

³ Taylor-Robinson, D, et al, *British Journal of Venereal Diseases*, 1979, 55, 30.

⁴ Wentworth, B B, *Nongonococcal Urethritis and Related Infections*. Washington, American Society for Microbiology, 1977.

⁵ Trehan, J D, *British Journal of Venereal Diseases*, 1979, 55, 26.

*. The statement that "about half the men" (with gonorrhoea) will have non-specific genital infection (NSGI) was drawn directly from the paper by Willcox cited by Dr Evans—"Even though the data on which the calculations are based are annual figures it appears nevertheless that 44%-56% [very reasonably edited to "about half"] of patients with gonorrhoea may have NSGI in the same year, mostly as a direct consequence of the exposure that led to the gonorrhoea." In view of the problems of definition of non-specific infection the author's argument and conclusions seem reasonable and may even give a

more accurate picture than do the official statistics.

Isolation rates of *C. trachomatis* in non-specific urethritis vary from investigator to investigator, as might be expected. Isolation rates of over 50% have been reported.¹⁻³ Most investigators accept the fact that their methods are not perfect, and in view of the problems of collecting specimens from the urogenital tract at widely varying stages of an infectious illness some cases of chlamydial infection will clearly be missed—after all, laboratories do not yet claim to grow even the gonococcus in 100% of cases of gonorrhoea.

Dr Evans's point that no properly conducted trial has established a need for 14 as opposed to seven days' treatment is correct, but it does not mean that such advice is necessarily wrong. Clinical experience (not as good as a properly conducted clinical trial's results but none the less it must not be disregarded) suggests that many patients are not cured by treatment with tetracyclines for seven days but that they are by two weeks' treatment.

With regard to treatment, most women today are understandably reluctant to take drugs during pregnancy. For the pregnant contacts of men with non-specific urethritis, the risks to the infant are real but do not seem to be great—large numbers of potentially infectious and untreated mothers go through their pregnancies without serious mishap. If the infant is at risk of infection then so is the sexual partner, so there is a good case for treating contacts. Once again, a diagnostic test for chlamydia would do much to help to resolve this and other problems.

Finally, we did say that evidence from Sweden suggested that *C. trachomatis* was responsible for two-thirds of a series of cases of pelvic inflammatory disease. Surely the serological findings in the investigation did just that.—Ed, *BMJ*.

¹ Sompolinsky, D, et al, *Israel Journal of Medical Science*, 1973, 9, 438.

² Schacter, J, et al, *Journal of the American Medical Association*, 1975, 231, 1252.

³ Vaughan-Jackson, J D, et al, *British Journal of Venereal Diseases*, 1977, 53, 180.

SIR,—We read with interest the leader on non-specific genital infection (21 July, p 161), which recognises the difficulty of diagnosis and the desirability of treatment of women harbouring the infective agents of non-specific genital infection, especially *Chlamydia trachomatis*.

In the first four months of 1979 a prospective study was made of the incidence of genital chlamydial infections in all new female patients attending the department of genitourinary medicine at Leeds. Specimens were taken by end cervical swabs and isolates made in untreated McCoy cells.¹

Chlamydia trachomatis was found in 122 (21%) of 570 women. Of these 122 patients, 36 (30%) presented as known contacts of men with gonorrhoea, 34 (28%) as women requesting examination who had no known contact with sexually transmitted disease, and 52 (43%) as women who were known contacts of men with non-gonococcal urethritis. Therefore without a chlamydia isolation service, less than half of these infections would have received antichlamydial therapy.

As regards concurrent infections, *C. trachomatis* was found in 41 (34%) of 120 women infected with *Neisseria gonorrhoeae*, 24 (29%) of 87 women infected with *Trichomonas vaginalis*, and 24 (15%) of 155 women in whom *Candida* species were isolated. It was the sole isolated pathogen in 50 (41%) of the 122 women with chlamydial infection

and was found in 52 (30%) of the 172 women who presented as contacts of men with non-gonococcal urethritis.

The isolation rates in women with gonorrhoea and in women who were known contacts of men with non-gonococcal urethritis are similar to those in other published series.² The high coincidence of infection with *T. vaginalis* has not been previously described. The results emphasise the desirability of routine screening for *C. trachomatis*, as well as for other genital pathogens, in women attending special clinics. In the absence of reliable clinical or microscopic indicators of infection this has to be done by cultural or immunofluorescent techniques at present. It is, however, only by recognition and treatment of genital chlamydial infections that the reservoir of asymptomatic women will be reduced and so halt the rising morbidity from non-specific genital infection, chlamydial pelvic inflammatory disease, and neonatal infection.

G R KINGHORN
M A WAUGH

Department of Genitourinary Medicine,
General Infirmary at Leeds,
Leeds LS1 3EX

¹ O'Neill, J J, McLean, B M, and Hambling, M H, *Journal of Clinical Pathology*, 1978, 37, 183.

² Richmond, S J, and Oriel, J D, *British Medical Journal*, 1978, 2, 480.

SIR,—I thoroughly enjoyed your excellent leading article "Non-specific genital infection" (NSGI) (21 July, p 161), but I feel one statement requires amplification. You state that "ideally consumption of milk products should cease during treatment since they reduce absorption of these drugs" (oxytetracycline and triple tetracycline). In fact tetracyclines have a high affinity to form chelates with many polyvalent metallic cations, such as the ferrous, ferric, aluminium, magnesium, and calcium ions. Milk and other dairy products ingested simultaneously with tetracycline-based antibiotics interfere with their absorption by 50-90% by virtue of their calcium and magnesium content.² Antacids containing divalent or trivalent cations (for example, calcium, magnesium, aluminium) also impair the absorption of orally administered tetracyclines.³ This interaction is well documented; nevertheless one study has indicated that over 5% of patients receiving tetracycline also receive such antacids.⁴ As you state, doxycycline is not markedly influenced by milk.⁵ However, it is not necessary to prohibit the consumption of milk products—an interval of three hours between the ingestion of tetracyclines and cations prevents the interaction.²

This problem of tetracycline bioavailability is closely related to two other problems, the problem of "curing" NSGI and the problem of patient non-compliance with therapeutic regimens. John⁶ found that a 21-day course of oxytetracycline four times daily had a 12.5% failure rate at the third month point; and Bhattacharya and Morton⁷ had an 11.8% failure rate at the same time with twice-daily triple tetracycline. "Cure" of NSGI continues to be written in inverted commas.⁸ Gatley⁹ found that there was a clear relationship between compliance and the number of doses in the day, and compliance is best when the patient receives written instructions about the correct use of oral medication regimens.¹⁰

For these reasons, in my practice I make it a routine to discuss with all patients a printed instruction sheet, which they are subsequently