



FIGURE The effect of different concentrations of sodium bicarbonate on the survival of *T pallidum* in different cultures. (a) Percentage motility, mean \pm SD of duplicate or triplicate samples; (b) latent period (days) for lesion development in rabbits, mean of 12 lesions in two rabbits \pm SD; (c) percentage motility, mean \pm SD of duplicate or triplicate samples; (d) latent period (days) for lesion development in rabbits, mean \pm SD of six lesions in one rabbit; (e) percentage motility, mean of duplicate samples \pm SD; and (f) latent period (days \pm SD), mean of six lesions in one rabbit. (Numbers on the graphs denote time (days) at which *T pallidum* culture was examined.)

TO THE EDITOR, *British Journal of Venereal Diseases*

Adenovirus type 19 and a closely related new serotype in genital infections

Sir,
In a report from this laboratory¹ the prevalence of adenovirus type 19 in infections of both male and female genital tracts has been noted in Western Australia. De Jong and associates have also reported the

isolation of adenoviruses from the genital tract.² These were originally thought to represent hybrids of types 10, 13, 19, and 30,³ but later work showed them to be sufficiently distinct both antigenically² and on the molecular level⁴ to be considered a new serotype.

The prototype strain has been submitted as candidate adenovirus type 37.² After an exchange of virus strains and antisera between ourselves and de Jong's laboratory, standard neutralisation tests clearly

indicated that some isolates from Western Australia previously regarded as adenovirus 19 were most similar to de Jong's new prototype virus (hereafter referred to as adenovirus 37 for convenience).

Of a selection of 26 genital and ocular adenoviruses isolated in these laboratories in 1977 and 1981 two were adenovirus 19 and 24 adenovirus 37. Two of the adenovirus 37 typings were from a cervical swab and an eye swab taken 18 days apart from the same patient. Rabbit antiserum raised

against one of our isolates neutralised prototype adenovirus 37 but not prototype adenovirus 19 (obtained from Fairfield Hospital, Fairfield, Victoria) when 20 doses of antiserum were tested against 100 infectious doses of virus. A close antigenic relationship was found to exist, however, between adenovirus 19 and 37, leading to confusion in identification of the latter serotype when, for convenience, neutralisation tests were set up with 20 neutralising doses of antiserum against untitrated newly isolated virus.

The results shown in the table clearly indicate that both adenovirus 19 and 37 infect the human genital tract. We have

TABLE Results of neutralisation tests on 26 isolates previously reported as adenovirus type 19

Neutralising antiserum	Urethral swab	Cervical swab	Eye swab from STD patients
Adenovirus 19	2	0	0
Adenovirus 37	13	8	3

confirmed the evidence obtained by de Jong *et al*² for the occurrence of adenovirus 37 in the eye and genital tract. These findings represent the first report of isolation of adenovirus 37 in the southern hemisphere (de Jong, personal communication). Extrapolation from these results to those we reported previously¹ would suggest that

TO THE EDITOR, *British Journal of Venereal Diseases*

An outbreak of gonorrhoea due to penicillinase-producing *Neisseria gonorrhoeae* (PPNG) in a provincial city

Sir,

Between October 1980 and July 1981 52 patients (31 men and 21 women) with gonorrhoea due to penicillinase-producing *Neisseria gonorrhoeae* (PPNG) attended the clinic at Cardiff Royal Infirmary. During the previous 12 months only three such infections were recorded.

Patients with uncomplicated gonorrhoea whose secretions contained Gram-negative diplococci were treated routinely with ampicillin 2 g and probenecid 1 g by mouth. Cultures were performed on chocolate agar and modified New York City medium.¹ Tests for sensitivity to penicillin and penicillinase production^{2,3} were carried out on all isolates. When infection by PPNG was established, patients were re-treated with a single injection of 2 g

about 8% of isolates were adenovirus 19 and approximately 92% adenovirus 37. The association of human genital adenovirus infections with types 19 and 37^{1,2,4-6} has been extended by other unpublished results from this laboratory showing that adenovirus 8, 9, 10, and 26 can also be isolated from genital specimens. It should be noted that all genital isolations of adenoviruses 8, 9, 10, and 26 in this laboratory and the two adenovirus 19s referred to in the table are neutralised only by the homologous WHO specific antiserum and not by antiserum to prototype adenovirus 37.

All the above adenoviruses belong to the human erythrocyte-agglutinating subgroups⁷ of Rosen's group II⁸ adenoviruses. It would be of interest to determine whether other members of these subgroups have a similar predilection for the mucous membranes of the genital tract and the eye. In the near future we will be reporting in more detail our laboratory and clinical findings in human genital adenovirus infections.

This letter has been published with permission from Dr J C McNulty, Commissioner of Public Health, Western Australia.

Yours faithfully,

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spectinomycin. Four women infected with PPNG had complications (pelvic infection three and Bartholin's abscess one); they were treated with 1 g kanamycin daily for three days. Four men with PPNG infections developed epididymo-orchitis and were given co-trimoxazole two tablets twice daily for seven days. One man had epididymitis at the time of his first visit, the other seven patients developed their complications within a week of their initial treatment with ampicillin and probenecid. During the period reviewed seven of 209 men and nine of 137 women infected with non-PPNG strains developed complications. The difference in incidence of complications due to infections with PPNG and non-PPNG strains is significant ($\chi^2 = 7.435$, $p < 0.01$). It was noted during the outbreak that the PPNG strains were gradually becoming resistant to other antibiotics.

Most of the patients infected with PPNG (86%) were Caucasians; the remainder were foreigners living in Wales.⁴ One patient was infected in Bangkok, the other infections

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were contracted in the United Kingdom, and 60% of the men were infected by four Cardiff prostitutes. Fifty-two per cent of the patients were from the middle social classes, 16% came from a socially deprived background, and 32% were unemployed.

Yours faithfully,

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