State of Alaska Epidemiology **Bulletin**

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Penicillinase-Producing Neisseria Gonorrhoeae

The State of Alaska is experiencing an outbreak of penicillin resistant gonorrhea. Thirty-two cases of Penicillinase-producing Neisseria gonorrhoeae (PPNG) have been identified in Alaska as of October 17, 1989. This represents a 300% increase over calendar year 1988 when eight PPNG cases were reported. Although most cases have occurred in the Anchorage area, ten (31.3%) cases have been reported from other areas of Alaska. In the third quarter of 1989, 11.3% of all reported gonorrhea in Anchorage and 5.6% of reported gonorrhea in the rest of the state was found to be resistant to penicillin.

PPNG is a gonococcal strain that has acquired the R-plasmid, a 4.7 Mdalton plasmid which encodes for the production of the enzyme Beta-lactamase. The enzyme renders penicillins ineffective by degenerating the Beta-lactam ring. Thus, penicillin should never be used as the drug of choice in treating PPNG cases. Because the clinical presentations of PPNG and the normal variety of gonorrhea are identical, consideration should be given to the use of PPNG-specific drugs on a routine basis.

All PPNG cases have been identified by the state public health and military laboratories as a result of their routine testing of all N. gonorrhoeae isolates for beta-lactamase production.

In the treatment regimens below, tetracycline may be substituted for doxycycline. Patient compliance may be affected since tetracycline must be taken at a dose of 500 mg 4 times a day between meals while doxycycline is taken at a dose of 100 mg 2 times a day without regard to meals. Tetracycline is not significantly less expensive than generic doxycycline.

For patients who cannot take doxycycline or tetracycline (e.g., pregnant women), erythromycin may be substituted (erythromycin base or stearate at 500 mg orally 4 times a day for 7 days or erythromycin ethylsuccinate, 800 mg orally 4 times a day for 7 days). Tetracyclines should never be used alone since tetracycline-resistant gonorrhea is commonly found in the United States.

While the majority of Alaska cases in the past were linked to foreign travel, PPNG may now be established in our local population. Prompt diagnosis, therapy, reporting and disease intervention are essential to contain the current outbreak. The following therapies are recommended by the Alaska Division of Public Health:

We recommend the following treatment regimens:

Ceftriaxone 125 mg IM*	Alternative Regimens:
*The Centers for Disease Control's 1989 Sexually Transmitted Diseases Treatment Guidelines recommend Ceftriaxone at 250 mg IM in order to delay the emergence of ceftriaxone-resistant strains. According to the STD Guidelines, "both doses appear highly effective for mucosal gonorrhea at all sites." We have found the 125 mg regimen to be cheaper, more easily administered, and equally efficacious.	**Spectinomycin 2 mg IM**
	(Pharyngeal gonorrhea infections do not respond to Spectinomycin. These cases should be treated with Ceftriaxone as indicated above.)
plus	**plus**
Doxycycline 100 mg orally 2 times a day for 7 days	**Doxycycline 100 mg orally 2 times a day for 7 days**
(if dual-therapy for chlamydia is desired)	(if dual-therapy for chlamydia is desired)

If you have questions regarding PPNG, you may call the STD Program Coordinator, Gary Bledsoe, Section of Epidemiology, Alaska Division of Public Health, at 561-4406.