ANTIMICROBIAL AGENTS AND CHEMOTHERAPY, Aug. 1977, p. 293-294

Vol. 12, No. 2
Printed in U.S.A.

In Vitro Activity of Rosamicin Against *Neisseria* and *Haemophilus*, Including Penicillinase-Producing Strains

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Received for publication 8 April 1977

Rosamicin was significantly more active against *Haemophilus* and *Neisseria* than are many antibiotics currently used to treat or prevent infection caused by these organisms. This enhanced activity was also observed against penicillinase-producing strains.

Rosamicin is a new bacteriostatic macrolide antibiotic that has been shown to be active in vitro against gram-positive bacteria, *Mycoplasma*, obligate anaerobes, and some gram-negative bacilli, especially when the test medium is alkalinized (1, 2, 4, 5). The purpose of the current study was to evaluate the in vitro activity of rosamicin in comparison with erythromycin against *Neisseria meningitidis*, *N. gonorrhoeae*, and *Haemophilus influenzae*, including penicillinase-producing strains of the latter two organisms. Other antibiotics currently used to treat or prevent infections caused by these organisms were also evaluated.

All strains of *H. influenzae* and *N. gonorrhoeae* were recent clinical isolates. Strains of *N. meningitidis* included recent clinical and carrier isolates. Tests with *Neisseria* were performed by agar dilution with an inoculum of 10^4 colony-forming units/cm^2 in (i) Mueller Hinton agar (BBL) for *N. meningitidis* and (ii) GC agar base (BBL) with 1% Kellogg defined supplement for *N. gonorrhoeae* (3). Tests with *Haemophilus* were performed in modified Levinthal broth with an inoculum of 10^6 colony-forming units per ml.

Results of tests with 15 strains of *H. influenzae* including seven ampicillin-resistant strains are shown in Fig. 1. When the minimal inhibitory concentrations of the four drugs tested were compared, rosamicin was the most active agent, 0.5 μg/ml inhibiting all strains. Chloramphenicol and erythromycin were significantly less active than rosamicin. Although bacteriostatic agents in low concentrations generally do not produce killing, minimal bactericidal concentrations of rosamicin equivalent to 1 μg or less per ml were observed with 60% of strains tested (Fig. 1). Minimal bactericidal concentrations of the other bacteriostatic agents were greater than 4 μg/ml for most strains tested.

As shown in Fig. 2, rosamicin was as active as penicillin G and significantly more active than rifampin, minocycline, erythromycin, or chloramphenicol in tests with 25 strains of *N. meningitidis*. Minimal inhibitory concentrations of rosamicin were 0.25 μg or less per ml

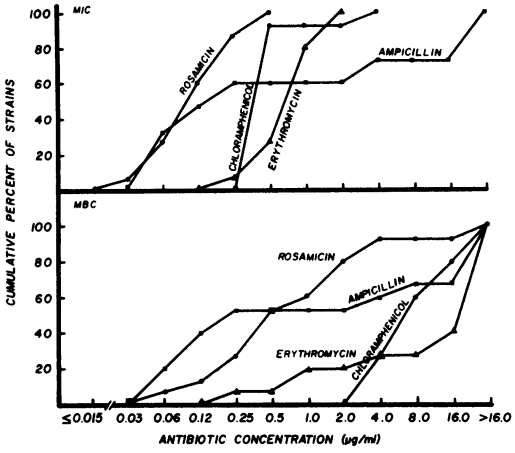

FIG. 1. *Comparative activity of rosamicin, ampicillin, chloramphenicol, and erythromycin against 15 strains of H. influenzae including seven ampicillin-resistant strains.*

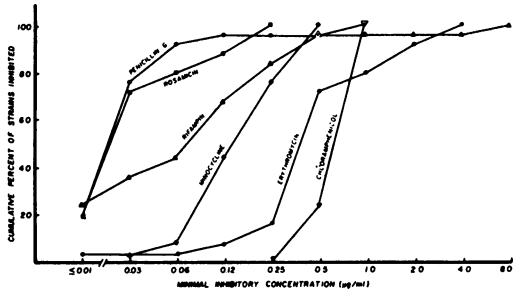

FIG. 2. *Comparative activity of rosamicin, penicillin G, rifampin, minocycline, erythromycin, and chloramphenicol against 25 strains of N. meningitidis.*

with all strains and were independent of the organisms' susceptibility to the other five antibiotics. In tests with 50 strains of *N. gonorrhoeae* (Fig. 3), minimal inhibitory concentrations of rosamicin were lower than minimal inhibitory concentrations of penicillin G against the majority of strains. The percentage of strains inhibited by 0.03 μg of each drug per ml was 94% for rosamicin, 46% for penicillin, 12% for erythromycin, and 6% for tetracycline. In tests with the recent epidemic strain of penicillinase-producing *N. gonorrhoeae* (results not included in Fig. 3), minimal inhibitory concentrations of each drug were 0.03 μg of rosamicin per ml, 0.25 μg of tetracycline per ml, 0.25 μg of erythromycin per ml, and >16 μg of penicillin G per ml.

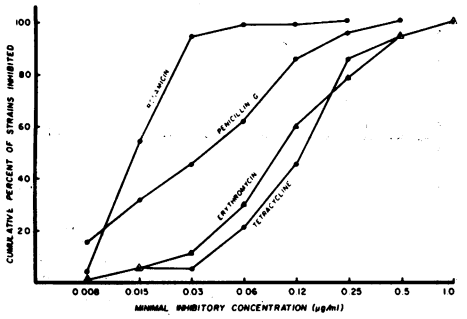

FIG. 3. *Comparative activity of rosamicin, penicillin G, erythromycin, and tetracycline against 50 strains of N. gonorrhoeae.*

These data indicate that rosamicin is highly active against isolates of *Haemophilus* and *Neisseria*, including penicillinase-producing strains. Since this activity is significantly greater than that of many antibiotics currently used to treat or prevent infections caused by these organisms, the clinical implications of these data warrant investigation.

This study was supported by a grant-in-aid from the Schering Corp., Bloomfield, N. J. The Center for Disease Control, Atlanta, Ga., kindly supplied the penicillinase-producing *Neisseria gonorrhoeae*.

Technical assistance was provided by Glenda G. Deyloff, Marcia K. Hostetter, and Lourdes R. Manning.

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