

Securophen azlocillin : pseudocidal action.

Contributors

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Securopen[®]

AZLOCILLIN



Pseudocidal action

A new
Bayer
advance

**Pseudomonas reported dead
after treatment with Securopen**

In vitro studies have shown Securopen to be eight times as active as carbenicillin against *Pseudomonas aeruginosa*.¹

The activity of Securopen against carbenicillin-susceptible strains of *Pseudomonas* was impressive, all the MIC's being $\leq 8\text{mg/l}$.² Even against carbenicillin-resistant strains the MIC was below 16mg/l and thus within clinically attainable levels. Strains resistant to ticarcillin³ and genta-

micin⁴ have also shown susceptibility to Securopen.

When the inhibitory and bactericidal activities of sera of patients treated with Securopen or ticarcillin were compared, Securopen was at least twice as active as ticarcillin.⁵

The Pseudocidal activity of Securopen is thought to be due to an increased facility to penetrate the *Pseudomonas* cell wall and to a greater stability of Securopen to enzymatic degradation.

Outstanding clinical response

**89% success in 346
severely ill patients**

Securopen was used in a variety of urinary and respiratory tract infections, septicaemia, peritonitis, osteomyelitis, meningitis, and endocarditis all due to *Pseudomonas*.⁶

Most of the patients were suffering from severe concomitant diseases or had undergone surgical intervention which often retarded the clinical response. Securopen was combined with other antibiotics, mainly amino-

glycosides, in only 22% of patients. The dose of Securopen varied between 6.0g per day for urinary tract infections up to 15.0g per day for other infections; children received 150mg/kg body-weight daily.

Securopen produced a positive clinical response in 89% of patients and a bacteriological success rate of 85% overall. Securopen was well tolerated, side-effects observed during therapy were few and of the type expected from a penicillin.

The range of Bayer antibiotics
takes another step forward

Since the discovery of the first sulphonamide by Domagk in the Bayer Laboratories and the first industrial process for commercial antibiotic production, Bayer has been at the forefront of antibiotic research and development.

Bayer continue to be a major innovator in this field with the

development of the acylureido-penicillins. Mezlocillin (Baypen) was the first member of this group to be made available in the U.K. and has an unrivalled spectrum of activity against Gram-negative and Gram-positive bacteria. Now Securopen provides an important advance in the treatment of pseudomonal infections.

Pseudocidal

When *Pseudomonas* is suspected or confirmed Securopen is the most effective anti-pseudomonal agent available

Securopen[®]
AZLOCILLIN

Combination therapy shows synergy

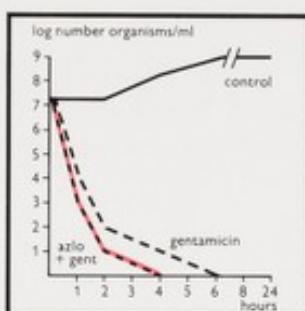
Synergistic activity with aminoglycosides and isoxazolyl penicillins

In severely ill patients, especially those with neutropenia, combination therapy may be desirable.

This use of a number of antibiotics not only increases the spectrum of activity but also prolongs, or postpones the de-

velopment of resistant strains.

Synergistic activity has been demonstrated with Securopen and gentamicin⁷ and cloxacillin² when studied *in vitro*. Clinical evaluation in cystic fibrosis⁸ and serious mixed infections⁹ has confirmed the value of combination therapy.



The addition of Securopen to gentamicin markedly increases activity against *Ps. aeruginosa*.

References

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High levels achieved

Therapeutic levels readily obtained with Securopen

The serum levels of Securopen and ticarcillin were compared after a 5.0g injection of each.⁵ The levels obtained with Securopen were significantly higher than ticarcillin during the study.

At one hour the level of Securopen was 236.5mg/ml \pm 12.9 and even after six hours the level was still 44.3mg/ml \pm 6.4. Corresponding levels for ticarcillin were 131.5mg/ml \pm 10.9 and 17.8mg/ml \pm 8.

Therapeutic tissue and fluid levels have also been recorded in

bronchial secretions,⁴ kidney,⁹ bone,¹⁰ wound exudate¹⁰ and urine.¹¹

One author reported "The major advantage of azlocillin (Securopen) might prove to be an adequate efficacy even with the administration of relatively low doses. Lower doses may be expected to result in a reduction of the serious side-effects frequently associated with the high doses of carbenicillin and ticarcillin needed to treat *Ps. aeruginosa* infections."⁵

Prescribing Information

Presentation Vials containing 0.5g, 1.0g, 2.0g and 5.0g azlocillin as azlocillin monosodium.

Uses The treatment of infections due to *Pseudomonas aeruginosa* especially those affecting respiratory or urogenital tracts or causing septicaemia.

Dosage and administration In non life-threatening infections 2.0g i.v. 8 hourly. In life-threatening infections 5.0g i.v. 8 hourly. In patients with renal insufficiency the dosage interval should be 12 hours. Children's dosage is based on 150mg/kg bodyweight daily. Treatment should be administered for at least 3 days after clinical symptoms have disappeared.

Contra-indications A history of allergy to other penicillins and cephalosporins. Securopen is inactivated by β -lactamases (penicillinases). As with all new drugs Securopen should not be used during the first 3 months of pregnancy.

Side-effects As for other injectable penicillins.

Pharmaceutical precautions Store below 25°C. Solution should be prepared immediately prior to administration by shaking with a suitable volume of Water for Injections until dissolved.

Legal category POM.

Basic NHS cost £3.11 per g (ex-5.0g vial)
Product Licence Numbers
PL 0010/0073, 0074, 0075, 0076.

Full prescribing information is available from:

Bayer UK Limited,
Pharmaceutical Division,
Haywards Heath,
West Sussex RH16 1TP

Telephone: Haywards Heath (0444) 414161
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BPD 003/AZ/8100

Flexibility of administration Securopen—convenient to use

The presentations of Securopen make adjustments of dosage a simple matter.

The Securopen range includes vials of 0.5g, 1.0g, 2.0g and 5.0g infusion vial. Hanging bags for infusion vials are available from Bayer UK Limited.

Securopen is compatible with most infusion fluids and may be administered using any standard giving set, including 'piggyback' infusion through a Y-junction. In cases of doubt compatibility should be proven before administration. A 10% solution of Securopen can be kept at room temperature for 6 hours without loss of efficacy.

EM confirmation

Electronmicroscopy studies have confirmed the bactericidal activity of Securopen.

Pseudomonas cells were unable to form septa but grew in length

and also showed lysis. Survival curves showed that the bacterial filaments were irreversibly damaged and therefore unable to form colonies.¹³

