

Table 1
Inhaled Efficacy of Inhaled Colistimethate Sodium

Investigators	Study Design/Primary Endpoints	Patients	Primary Findings
Berlana, et al ⁷	<p>Retrospective, single center, single agent</p> <p>Dose/duration: <u><i>Acinetobacter baumannii</i>:</u></p> <ul style="list-style-type: none">Colistimethate 0.5 MU q6hr – 1 MU q8hr for 12 ± 8 days inhalationColistimethate 1 MU q12hr – 2 MU q8hr for 11±6 days IV/IMColistimethate 10mg q12hr for 8-10 days intrathecal <p><u><i>Pseudomonas aeruginosa</i>:</u></p> <ul style="list-style-type: none">Colistimethate 0.5 MU q6hr – 1 MU q8hr for 12±8 days inhalation <p>Primary endpoint: clearance of causative organism</p>	<p>80 patients total (71 courses colistin)</p> <p>Isolate location:</p> <ul style="list-style-type: none">71 (89%) sputum, aspirate, bronchoalveolar lavage7 (9%) urine <p>Location:</p> <ul style="list-style-type: none">67 (84%) ICU13 (16%) medical surgical ward <p>Administration route <u><i>Acinetobacter baumannii</i>:</u></p> <ul style="list-style-type: none">Inhalation: 60 patientsIV/IM: 12Intrathecal: 2 <p><u><i>Pseudomonas aeruginosa</i>:</u></p> <ul style="list-style-type: none">Inhalation: 11 patients <p>Concomitant antibiotics</p> <ul style="list-style-type: none">64 (80%) at least 1 other antibiotic before colistin:<ul style="list-style-type: none">17 (21%) Imipenem/Cilastatin14 (18%) Amoxicillin/Clavulanic Acid58 (73%) received at least 1 other antibiotic during colistin<ul style="list-style-type: none">Carbapenems (35%) <p>Isolate</p> <ul style="list-style-type: none">69 (86%) <i>Acinetobacter baumannii</i>11 (14%) <i>Pseudomonas aeruginosa</i>	<p>Clearance of causative organism: <u><i>Acinetobacter baumannii</i> (inhalation)</u></p> <ul style="list-style-type: none">Negative: 33 of 33 cultures (100%)Positive: 0% <p><u><i>Pseudomonas aeruginosa</i> (inhalation)</u></p> <ul style="list-style-type: none">Negative: 4 (57%)Positive: 3 (43%) <p>Mortality: 14 (18%)</p> <p>Sensitivities: <u><i>Acinetobacter baumannii</i>:</u></p> <ul style="list-style-type: none">41 (59%) patients only sensitive to colistin70 (100%) patients sensitive to colistin <p><u><i>Pseudomonas aeruginosa</i>:</u></p> <ul style="list-style-type: none">No patients were only sensitive to colistin11 (100%) patients sensitive to colistin <p>Renal toxicity</p> <ul style="list-style-type: none">IM/IV therapy did not result in significant changes in BUN/SCr.
Michalopoulos, et al ⁸	<p>Retrospective, single center, single agent</p> <p>Dose/duration:</p> <ul style="list-style-type: none">1.5-6 MU/day of aerosolized colistimethate in 3-4 divided doses administered for a mean of 10.5 days (3-32 days)Delivered by Siemens Servo Ventilator 300 in ventilated patientsDelivered via face mask for spontaneously breathing patients <p>Primary endpoint Positive outcome (cure or improvement) of pneumonia based on clinical, radiological, and laboratory findings</p>	<p>8 patients total</p> <ul style="list-style-type: none">One infection due to <i>P. aeruginosa</i>Seven infections due to <i>A. baumannii</i>Received colistimethate for multidrug-resistant gram-negative bacteria between 10/2000 and 1/2004 at Henry Dunant Hospital in Athens, GreeceAdmitted to ICU with mean Acute Physiology and Chronic Health Evaluation II scores of 14.6 at admission and 17.1 on day 1 of colistin therapyAll patients had mechanical ventilatory support for a mean of 19.4 daysAll received prior antimicrobials before colistimethate was initiated3/8 patients treated with immunosuppressive therapy4/8 patients received immunoglobulin therapy during hospitalizationMean age 59.6 years6/8 patients were male	<ul style="list-style-type: none">Pneumonia responded to treatment in seven of the eight patients<ul style="list-style-type: none">four cured episodesthree improved episodesRemaining 1 patient deteriorated and died, but had many underlying diseases (hypertension, chronic renal insufficiency)Follow-up cultures were available for five of the eight patients<ul style="list-style-type: none">four patients had eradication of pathogenPathogen persisted in 1 patient, who subsequently diedNo superinfection with gram-positive bacteria or yeastsNo gram-negative bacteria developed resistance to colistimethateAerosolized colistimethate was well tolerated. No patients experienced chest tightness, bronchoconstriction, or apnea<ul style="list-style-type: none">two patients with a history of COPD received B2 agonistRenal function did not worsen except for one patient who had prior renal dysfunction