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Title: Penetration of moxifloxacin in bronchial secretions in hospitalized patients with acute exacerbation of COPD

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Body: Moxifloxacin (MXF) is recommended for the treatment of acute COPD exacerbation in hospitalized patients. However, pharmacokinetics of the drug in “real life” patients has not been investigated thoroughly. Aim: To determine the pharmacokinetic profile of MXF in COPD exacerbations, penetration of MXF into bronchial secretions and pharmacodynamic parameters for common pathogens. Methods: 16 hospitalized patients with COPD exacerbation (aged 69.3±9.2) were included (5 ICU, 11 ward). Patients received 400mg intravenous MXF o.d. Serial blood and bronchial secretions samples were taken in steady state for a 24hour interval. MXF concentrations in plasma and secretions were determined by high-performance liquid chromatography. Areas under the curve (AUC’s) were calculated and penetration in secretions was expressed as AUCsecretions/AUCplasma ratio. Pharmacodynamic target attainment was estimated for the MICs of common pathogens: AUC24/MIC>30 for Gram positive and >125 for Gram negative. Results:

Table 1

Cmax plasma (mg/L)	6,24± 0,94	Cmaxsecretions (mg/L)	4,65 ±2,60
AUC24plasma (mg/L*h)	45,15± 10,32	AUC24secretions (mg/L*h)	38,20±20,57
Tmax secretions (h)	3,93± 2,70	AUC24 secretions/plasma	0,85± 0,44
CL (L/hr)	9,37± 2,17	T ½ (h)	11,17±5,11
Vss (L)	124,32±42,30	AUC/MIC S. pneumoniae	180,60±41,28
AUC/MIC H. influenzae	752,50±172	AUC/MIC M. catarrhalis	752,50±172

MXF penetration in secretions is particularly sufficient (85%). Pharmocodynamic target for gram positive

and negative pathogens is adequately attained. Conclusion: MXF, in the common applied i.v. dose for hospitalized COPD exacerbations, penetrates well in bronchial secretions with sufficient concentrations against respiratory pathogens.