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Abstract for poster presentation

Category: Pulmonology

Intra-pulmonal Deposition of two different Tobramycin Formulations

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For patients with cystic fibrosis, therapy of chronic pseudomonas aeruginosa infection is essential to improve their quality of life and the course of their disease. Thus a time and cost efficient inhalation of Tobramycin, in an acceptable drug concentration, is crucial. Currently, the most used Tobramycin for inhalation is TOBI[®]. It is recommended in a 300mg dose for inhalation with a Pari LC Plus, which offers a high input of Tobramycin, but only a moderate exploitation of the drug.

The aim of the study was to determine, that inhalation of lower concentrated GERNEBCIN[®] (Infectopharm), combined with a lower filling dose, would result in a comparable lung deposition of drug substance when supplied with the AKITA device, which has a much higher deposition efficiency compared to conventional nebulizer systems.

In this randomized cross-over study, 6 healthy subjects inhaled 300 mg TOBI[®], filling volume 5 ml, using a Pari Turbo Boy N[®]/LC Plus and 160 mg GERNEBCIN[®], filling volume 4 ml, using AKITA System (Pari LC Star nebulizer).

Inhalation of TOBI[®] (5 ml/300 mg) results in 34 ± 7 mg deposition of Tobramycin in the lungs, while inhalation of GERNEBCIN[®] (4 ml/160 mg) results in 50 ± 5 mg deposition in the lungs. Time to deposit 1 mg in the lungs was not significantly different (TOBI[®]: 0.33 min/mg, GERNEBCIN[®] 0.40 min/mg).

Compared to the inhalation of TOBI[®] the drug amount deposited in the lungs was significantly higher for GERNEBCIN[®] and costs for depositing one gram were much lower (TOBI 1.60€/g deposited, GERNEBCIN 0.36€/g deposited). By pre-setting the dosage via a patient individualized smart card the equivalence dose to Tobi can be set. The lower drug concentration in GERNEBCIN[®] might also lead to a higher acceptance in CF patients, because of the lesser oropharyngeal irritations.