primary studies - published RCT

Nebulized tobramycin in the treatment of adult cf pulmonary exacerbations.

Code: PM24219814 **Year:** 2014 **Date:** 2014 **Author:** Al-Aloul M

Study design (if review, criteria of inclusion for studies)

Randomized crossover trial design, a pilot study

Participants

20 CF adults chronically infected with Pseudomonas aeruginosa (Psa) with acute respiratory exacerbations .

Interventions

14 days of IV tobramycin with nebulized tobramycin 300 mg twice a day (TNS). Patients also received IV colistin in both arms.

Outcome measures

mean change in FEV1 % predicted, sputum Psa , urinary protein leak, urinary levels of markers of acute renal tubular injury, time to next exacerbation requiring hospitalization, patient satisfaction, serious adverse effects

Main results

Improvement in spirometry was similar between the two groups [mean change in FEV1 % predicted: IV group 16.4 (standard deviation 8.5) versus TNS group 19.9 (11.3), p=0.26], but there was more suppression of sputum Psa in the TNS group [mean difference between treatments 0.85 log10 colony-forming units/mL (CI 0.03 to 1.67), p=0.05]. IV tobramycin was associated with a greater urinary protein leak [mean difference between treatments 0.59 mg/24 hr (0.30 to 0.87), p=0.0005] and higher urinary levels of markers of acute renal tubular injury: N-acetylglucosaminidase [0.72 IU/mmol (0.37 to 1.07), p=0.0004], alanine aminopeptidase [1.19 IU/mmol (0.70 to 1.68), p=0.0001], and beta2- microglobulin [0.44 mug/mmol (0.16 to 0.72), p=0.0046] than TNS. Compared with IV tobramycin, TNS treatment prolonged the time to next exacerbation requiring hospitalization (p

Authors' conclusions

TNS is effective in treating acute exacerbations of Psa in CF patients, but with a renal sparing potential compared with the IV preparation. 2014, Mary Ann Liebert, Inc. 2014.

http://dx.doi.org/10.1089/jamp.2013.1055

See also

J Aerosol Med Pulm Drug Deliv. 2014 Aug;27(4):299-305. doi: 10.1089/jamp.2013.1055. Epub 2013 Nov 12.

Keywords

Adult; Anti-Bacterial Agents; Inhalation OR nebulised; pharmacological_intervention; Respiratory Tract Diseases; Tobramycin; Bacterial Infections; Respiratory Tract Infections; Infection; Exacerbation; Aminoglycosides; Pseudomonas aeruginosa; Pseudomonas;