**BTS Abstract**

Title: Unwarranted use of nephrotoxic antibiotics in children with cystic fibrosis

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**Introduction:**

As life expectancy of individuals with cystic fibrosis (CF) continues to increase, complications resulting from lifetime drug exposures and CF comorbidities are becoming more prevalent. An example of this is chronic kidney disease (CKD). Factors contributing to CKD in CF include age, CF related diabetes, aminoglycoside use, chronic respiratory infection and transplantation. The exact mechanism by which aminoglycosides damage the kidneys is not fully understood but the risk of CKD increases with cumulative use. To reduce this risk, it is recommended that aminoglycosides should only be used if there is no equally effective but less nephrotoxic alternative, such as when treating *Pseudomonas aeruginosa* (PA).

**Methods:**

We developed an electronic questionnaire which used clinical vignettes to clarify which intravenous antibiotics would be used to treat an infective respiratory exacerbation in a child with CF who had never had PA, a child who was free of PA for >12 months and a child with chronic PA infection. The link to this questionnaire was emailed to the clinical lead at the 27 tertiary paediatric CF centres in the UK who was asked to complete it to reflect practice at their centre.

**Results:**

We obtained responses from 23/25 (93%) centres. 9/25 (36%) UK centres use Ceftazidime and Tobramycin as first line antibiotic regimen for the treatment of infective respiratory exacerbations in children who have never isolated PA. 15/25 (60%) use the same combination in those who are free of PA. Four stated they would consider change to a non-nephrotoxic antibiotic if the child remained free of PA for >2 years. All centres used Ceftazidime and Tobramycin to treat an infective exacerbation in a child with chronic PA infection.

**Conclusions:**

At least one third of UK tertiary paediatric CF centres use aminoglycosides to treat infective pulmonary exacerbations in children who have never grown PA and more than half use them in children who are free of PA infection. The unwarranted use of aminoglycosides in these patients puts them at increased risk of future renal impairment.