161 The first results of antimicrobial susceptibility of isolates from adult patients with cystic fibrosis from the Province of Vojvodina, Serbia

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Over the past last few decades, cystic fibrosis (CF) has changed from a disease of childhood into a disease of adults. When a chronic infection of the lungs occurs, eradication of the pathogens is almost impossible. In the Institute for Pulmonary Diseases of Vojvodina, we have started the treatment of adult patients with cystic fibrosis in the year of 2010.

The aim of the study is to examine the patterns of antimicrobial susceptibility of the pathogens isolated from adult patients with cystic fibosis due to a rational use of antimicrobial therapy.

The results are shown for the first six adult patients with cystic fibrosis treated in the Institute, 5 females and 1 male, at the average age of 24.8 years. The following microorganisms were isolated from sputum samples: *Pseudomonas aeruginosa* 15 (45.5%), *Pseudomonas* species 11 (33.3%), *Escherichia coli* 5 (15.2%), *Klebsiella pneumoniae* 1 (3%), *Staphylococcus aureus* 1 (3%). The isolated microorganisms showed high susceptibility rates to piperacillin–tazobactam (85.7%) meropenem (81.8%), imipenem (78.8%), cefepime (81.8%), ceftazidime (78.8%), ceftriaxone (72.2%). Susceptibility to ciprofloxacin was 68.7%, and to gentamicin 59.4%. Besides high susceptibility rates to carbapenems, similarly high susceptibility rates of the isolated microorganisms were registered to the third and fourth generation of cephalosporins.

The goal of monitoring the resistance of pathogens isolated from the patients with cystic fibrosis and the rational use of antimicrobial therapy is to reduce the number of microorganisms and to maintain the patients' pulmonary function and decrease an irreversible damage of the pulmonary parenchyma.

162 Bronchial artery embolization (BAE) in adults with cystic fibrosis: a single-centre case series

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Objectives: To investigate indications and outcomes for BAE in CF Patients.

Methods: Retrospective case series of 28 CF adults who underwent BAE 2002–2013. Data regarding clinical outcomes were collected via notes review.

Results: Mean age 27, range 16–68. Mean FEV_1 pre BAE 39% predicted. 30% referred for massive haemoptysis (>240 ml), 20% for moderate (<100 ml) and 50% recurrent small volume haemoptysis. BAE was performed using PVA particles following CTPA. 100% had good radiological results. Recurrent haemoptysis occurred in 1 patient after, 10% shortly after and 20% within 1 year, with no massive bleeds post BAE. 60% had no serious complications. 20% had chest pain pre BAE and 50% severe chest pain post procedure, with CRP rising. Fever was present in 10% pre and 50% post BAE. Inflammatory complications were associated with chest pain and high CRP pre BAE. 2 patients died soon after BAE, of whom 1 had retrograde emboli to kidneys and spleen, and 1 an immediate severe inflammatory response and sepsis. 2 patients who had severe pain, fever and CRP rise post BAE both died of progressive ventilatory failure. Complications were correlated with smaller particle size and greater volume of particles used.

Conclusion: BAE may produce excellent radiological results and prevent massive bleeds, it may not stop all bleeding and may cause harm via pulmonary inflammation. This may be reduced by minimising inflammation pre-BAE.

BAE may be beneficial in massive haemoptysis but for others risks may outweigh benefits. Complications may occur when smaller particles are used or more extensive BAE performed. It may be prudent to limit BAE to smaller areas using larger particles.

163 TIVAD infection and TIVAD related cardiac problems in transplanted CF patients

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Introduction: Treatment with immunosuppressive medication increases the risk of infection in transplanted CF patients. There are no recommendations with regards to the removal of a TIVAD after lung transplantation.

Objective: To investigate the prevalence of bloodstream infections and cardiac problems in CF patients with and without TIVAD.

Methods: Retrospective data from the CF patient cohort (n = 86, 50 female) transplanted at the University Hospital Leuven (1992–2013): results of bloodstream cultures (routine culture or for clinical indication) and trans esophageal echocardiography comparing patients with and without TIVAD (mean post-transplant follow-up 77 (1–277) months).

Results: 49/86 (29 female) patients had a TIVAD at the time of transplantation. 11 TIVADs were removed after transplantation (5 due to infection, 6 due to technical failure). Positive bloodstream cultures were found in 8 patients (8 positive cultures) without TIVAD and in 20 patients (39 positive cultures) with TIVAD ($p = 0.03$, Fischer exact test). 5 patients with TIVAD developed severe insufficiency of the mitral valve and in 3 of these patients mitral valve replacement was needed while no cardiac abnormalities were found in the the transplanted CF patients without TIVAD ($p = 0.08$, Fischer exact test).

Discussion: A higher rate of positive bloodstream culture and mitral valve insufficiency were found after lung transplantation in CF patients with a TIVAD. Removal of TIVAD seems warranted in CF patients after lung transplantation.

164 Incidence, management and outcomes following spontaneous pneumothorax in adult patients with CF attending a Regional Centre

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Objectives: Spontaneous pneumothorax (PTX) is a well recognised complication of CF. Our aim was to determine the incidence, success of different modalities of treatment, impact on disease severity and outcomes.

Methods: Data were retrieved retrospectively from electronic patient records for patients with ⩾1 PTX between 2006 and 2013.

Results: 23 patients [median (range) age at first episode 26.2 (15.9–45.9) yrs, FEV_1 27 (15–47) %predicted and BMI 18.6 (14–27.1) kg/m^2] had 36 episodes of PTX. Incidence 0.6–1.8/100 patients/year. Initial management conservative (n = 2) and chest drain (n = 21). 10 (48%) resolved with chest drain, 11 (52%) required further management; medical talc pleurodesis (n = 2) and surgical VATS and talc pleurodesis (n = 9) after 8 (3–14) days. 8 patients (35%) had a further 13 episodes of PTX after 4.4 (0.5–55.4) months. Median FEV1 decreased from 44 (25–59) to 32 (20–47) % predicted, $p = 0.048$ in 2 yrs pre PTX. Patients required significantly more days of intravenous antibiotic treatment post vs.pre [98 (0–297) vs. 48 (0–206) days, $p < 0.01$ and had a significantly higher CRP level [114 (8.5–378) vs. 45 (5–245), $p = 0.17$]. 14 patients (61%) required LTOT post compared to 5 (22%) pre PTX, $p < 0.01$. 5 patients had been referred for lung transplantation pre PTX; 10 patients (43%) required referral post PTX after 8.0 (0.9–80.80) months. 7 patients (30%) have died (57% at 1 year, 14% at 2 years and 29% at 4 years); median survival 8.3 (1.5–38) months post first PTX.

Conclusion: Spontaneous PTX is a poor prognostic factor in CF associated with a high risk of recurrence, increased treatment burden, decline in clinical status and poor survival rates.