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Effects of longterm treatment with Montelukast in patients with mild cystic fibrosis

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Previously we have provided evidence that Montelukast reduces eosinophilic inflammation in cystic fibrosis but could not report a significant clinical benefit after a 21 day treatment course with Montelukast[A].
AIM: The aim of the present study was to evaluate the clinical and anti-inflammatory effects of long-term treatment with Montelukast (6 to = 14 years, 5 mg; > 14 years, 10 mg) by follow-up of the original study population.
METHODS: Pulmonary function tests (FEV_1, MEF_{25}), total eosinophil count, Immunoglobluline (Ig) E as well as sputum samples/pharyngeal swabs were evaluated at the beginning of the study (PRE) and after a longterm treatment course (POST).
RESULTS: Follow-up data was available from 15 of the original sixteen patients (9 boys/6 girls); age POST median 12.5 years (8 to 18.5 years) with a median observation period of 3.67 y (2.71-4.84 y). Overall there was no significant improvement of FEV_1 (PRE/POST median 92.5/86 %) or MEF_{25} (PRE/POST median 58.5/61 %) and total eosinophil count (PRE/POST median 150/150 µl). IgE (PRE/POST median 38.2/43.9 kU/L) did not change significantly, but 6 of the originally 7 chronically *Pseudomonas aeruginosa* infected patients were repeatedly negative ($p< 0.031$).
CONCLUSION: Montelukast might support prevention of chronic *Pseudomonas aeruginosa* colonization in mild cystic fibrosis.
[A]Schmitt-Grohé S et al. Anti-inflammatory effects of montelukast in mild cystic fibrosis. Ann Allergy Asthma Immunol 2002; 89:599-605

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Colistin intravenously is a safe and effective treatment of multidrug-resistant microorganisms in cystic fibrosis

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Introduction: Multidrug-resistant microorganisms are an important and growing issue in the care of patients with cystic fibrosis (CF). Colistin, also known as Polymyxin E, has been of interest because of the significant activity against multiresistant pseudomonas aeruginose and the low resistance rates to it.
Aim: To determine the efficacy and safety of treatment with intravenous Colistin in patients with CF.
Patients/methods: Thirteen CF patients were treated with 6 MIE Colistin intravenously once a day for 14 days. Spirometry was undertaken and Colistin levels were measured in serum before and 1.5 hours after the infusion.
Statistics: The changes in forced expiratory volume (FEV-1) and forced vital capacity (FVC) before and after Colistin treatment were compared using the Wilcoxons matched-paired signed–ranks test. Averages are expressed as median values.
Results: FEV1 increased significantly by 4.1% after the treatment ($P<0.05$). The FVC increased 7,6% ($P<0.01$)
Conclusion: The Colistin treatment was well tolerated by all CF patients with no signs of toxicity. Yet, one patient had an allergic reaction within infusion of the first dose. Colistin is an effective and safe intravenous antibiotic treatment of multidrug-resistant microorganisms in patients with cystic fibrosis.

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Insulin Glargine (IG) for therapy of Cystic Fibrosis Related Diabetes (CFRD) and Impaired Glucose Tolerance (IGT) in Cystic Fibrosis (CF) patients (pts)

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The aim of study was to investigate the efficacy and safety of IG in a group of CF pts with a diagnosis of CFRD or IGT. The study group was composed by 6 CFRD pts (Group A: 5 females, mean age 26 yrs, range 19-34 yrs, DM mean duration 11 yrs, range 6-18), 6 CF pts without fasting hyperglycemia and DM on the basis of OGTT (Group B: 4 females, mean age 23 yrs, range 14-34) and 3 CF pts with IGT (Group C: 1 female, mean age 25 yrs, range 19-31). A single daily dose of IG was performed (mean dose for Group A was 0,3 U/Kg, Group B 0,2 U/Kg, Group C 0,1 U/kg). Group A, as before IG therapy, received insulin regular or rapid analogue before meals and IG took the place of insulin intermediate; Group B and Group C had never been treated before with insulin. Data about HbA1c, BMI, frequency of hypoglycaemia and compliance to the therapy were collected at the start of IG therapy and after 3 months. In all pts no significant difference was found in HbA1c (Group A: 9.6% vs 9.2%; Group B: 7% vs 7,47%; Group C: 6,76% vs 6,74%) and BMI (Group A: 21 vs 21,5; Group B: 16,68 vs 17,2; Group C: 18,17 vs 18,55). Hypoglycemia frequency did not change in Group A and no hypoglycemia episodes were observed in Group B and C. Compliance improved in Group A and was very good in Group B and C.
Even if IG did not improve metabolic control in our patients, it appeared safe and well accepted and it seemed to have a good impact on nutritional status. Indeed the lack of significance in BMI increment might depend on the low number of pts and on the short follow up. We are performing an Italian multicenter case-control study in IGT patients to investigate if IG can improve CF prognosis.

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Guidelines for human embryonic stem cell research in CF: Two countries, two similar views

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Stem cells are undifferentiated cells capable of self-renewal, differentiation and growth. Human Embryonic Stem Cells (hESC) have a tremendous potential in cell therapy for various diseases, for example cystic fibrosis (CF). They can be derived from embryos created by *IVF* and no longer wanted for reproductive purposes. As well, they can be derived from embryos created by Somatic Cell Nuclear Transfer (commonly known as cloning). For different reasons, both of these sources of hESC are ethically controversial. This presentation summarizes current policy for hESC research in two western countries. Canada (2002, 2004) and Switzerland (2004, 2005) have been selected for comparative ethical analysis with particular attention to points of convergence and divergence. Both countries: authorize the derivation of hESC under strict conditions, because of the potential scientific and therapeutic benefits; are concerned with the ethical dimensions of creating hESC; attentive to the ethical arguments about the moral status of the human embryo; prohibit the creation of embryos for research and the use of cloning for stem cell research; and impose several other conditions for using ESC. Each country: used a different policy-making process (parliamentary process vs. referendum); has different national policy implementation practices.
Canada and Switzerland are at the conservative end of the spectrum of countries that allow for hESC research. Diseases like CF could benefit of hESC research and eventual stem cell therapeutics. Hence the importance of reviewing policies and practices in a global context as this might benefit patients with CF disease.

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