be the key of any strategies designed to reduce the risk of MRSA acquisition by patients with CF.

P71 CF NEWBORN SCREENING AND ITS PREVENTIVE EFFECT: 7 YEARS EXPERIENCE IN THE UMBRIA REGION

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In the Umbria Region the CF newborn screening (NBS) was carried out since the year 2000. The tests were run in the "CRI Laboratory" in Rome using the IRT1/OLA31/IRT2 protocol [1]. For all positive subjects more detailed tests were suggested in order (a) to find mutations not contained in the OLA31 panel, (b) to study the available family members to find CF traits and at risk couples. The whole CF gene was studied by DGGE analysis and by sequencing in patients with positive or borderline sweat test. In the 7 years 15 CF patients out of 50,941 newborns were found (1:3465), 8 with the classic and 7 with the mild form. The IRT1 and OLA positive cases for at least one mutation or IRT2 positive cases identified were 114: 79 (69%) of them did not come to our observation. Of the 35 examined subjects 13 were found to be CF affected (6 classic and 7 mild) and 22 were heterozygotes. In 6 (4 classic and 2 mild) out of 13 CF patients the genotype was already known by the OLA panel while in 5 CF patients (1 classic and 4 mild) only one mutation was detected and in 2 CF patients (1 classic and 1 mild) the OLA panel was negative. The other 2 patients had a clinical diagnosis as the IRT test was negative: they showed a classic CF and the diagnosis was confirmed by sweat test and identification of the CFTR gene mutations. The IRT assay, even with the 63% of false positive results, was very useful in the identification of the CFTR gene mutations in both the homozygous and heterozygous subjects. In our experience the IRT positive cases gave us the possibility to perform the appropriate genetic counselling followed by the cascade screening and 6 new at risk couples and 2 atypical CF were detected. On the contrary the IRT test failed to detect 2 out of 8 classical CF and the OLA in our population was able to find 65.38% of the mutations (17 out of 26) in 13 patients with the IRT positive test. Our data suggest that the NBS for CF has a great potentiality in the prospective prevention by means of the genetic counselling followed by cascade screening. The need exists for a better knowledge of the prevention power of the NBS program by the medical staff and by the families of the screened subjects. Even if in the last few years the number of the people coming to have more detailed genetic analysis after a positive NBS test is increasing, we think that more attention has to be spent to suggest further investigation for the maximum preventive effect.

Reference(s)

[1] Clinical Genetics 2007; 72:39–46

P72 MEASUREMENT OF PANCREATITIS-ASSOCIATED PROTEIN IN COMBINATION TO IMMUNOREACTIVE TRYPSINOGEN FOR NEONATAL SCREENING STRATEGY OF CF: A MULTICENTER FEASIBILITY STUDY

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The most widespread strategy of neonatal screening for CF consists in the measurement of immunoreactive trypsinogen (IRT) from dried blood spots coupled with *CFTR* mutation analysis. However, this strategy is complicated by the high cost of DNA analysis, the need for an informed consent and of genetic counselling. Moreover, the false positive rate of the IRT assay is quite high (1–2%) resulting in too many unnecessary DNA tests. Thus, alternative markers are being investigated to avoid these drawbacks. Pancreatitis-associated protein (PAP) is a stress protein synthesized by the diseased pancreas, shown to be elevated in newborns with CF and potentially useful in combination with IRT to ameliorate specificity of the screening strategy. On these bases, a multi-center feasibility study including two sites in USA, one in Germany and one in Italy has been performed with the aim to assess the usefulness of the combined IRT-PAP CF protocol against the more traditional IRT/CFTR strategy. Measurement of IRT and PAP was performed in n=18080 neonates. IRT was detected by a time resolved fluoroimmunoassay (Perkin-Elmer Life Sciences, Turku, Finland) in dried blood spots collected at age 3–5 days. PAP was tested by a novel two site-fluoroimmunometric assay provided by Perkin-Elmer. Based on the calculation of the percentiles of data obtained in the different centres, hypothetical cut-offs were set at IRT>50 ng/mL and PAP >1.8 ng/mL or IRT>100 ng/mL and PAP>1.0 ng/mL. IRT/PAP strategy may be a promising alternative since it could decrease the number of mutation analysis required (down to 0.3%) thereby decreasing the cost of the screening as well as the number of carriers identified. Limitations of this study include the rather small sample size that does not allow the evaluation of the sensitivity in detecting mild CF forms.

P73 *IN VITRO* CHARACTERIZATION OF BRAMITOB® (INHALED TOBRAMYCIN 300 mg/4 ml) WITH NEXT GENERATION NEBULIZERS

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Aim: Nebulization of inhaled drugs has improved in the past years thanks to the development of a new generation of nebulizers, characterized by greater efficiency, portability and shorter nebulization times. These achievements in aerosol delivery may improve quality of life and adherence to therapy in cystic fibrosis (CF) patients. The aim of this study was to compare *in vitro* performance of four devices [PARI TurboBOY N LC PLUS (LC), PARI eFlow Rapid (eF), Optineb-ir (Op) and Akita LC Star (Ak)] when nebulizing 4 ml of Bramitob®, a new formulation of inhaled tobramycin developed by Chiesi Farmaceutici.
Methods: By means of a Next Generation Impactor, the aerodynamic particle size distribution was studied evaluating the mass median aerodynamic diameter (MMAD) and fine particle fraction (FPF). Moreover, the Delivered Dose (DD) and the duration of nebulization were measured.
Results: The MMAD was lowest with Ak, whereas higher with eF, LC and Op (2.7 μm, 4.1, 4.8 and 5.5 μm respectively). The FPF was higher with Ak and eF (77.3 and 66 mg) and lower with LC and Op (50.4 and 44.2 mg). The DD was similar with eF, LC and Op (86, 81.6 and 87.9 mg) but was much higher with Ak (147.2 mg). Nebulization time was lowest with eF (5.5 min) followed by LC and Op (7.4 and 9.9 min respectively), whereas much longer with Ak (24.3 min).
Conclusions: Optineb-ir and eFlow Rapid are characterized by an aerodynamic particle size distribution and a delivered dose similar to that of PARI TurboBOY N LC PLUS, which is the device used in the clinical trials conducted with Bramitob®. However, small differences, such as those observed in the nebulization time, may represent an important feature when considered in the daily therapies that CF patients undergo.