**Aims**

Nasal Nitric Oxide (nNO) is an integral part of Primary Ciliary Dyskinesia (PCD) diagnostic work-up [1]. Few studies have investigated the diagnostic accuracy of the portable electrochemical NO analyzer (NIXO MINO) in comparison to the better validated stationary chemiluminescence analyzer (Ecomedics CLD88sp) [2]. In this study, we compared the diagnostic accuracy of the two methods in a prospective study from two PCD centers in Greece and Cyprus within the framework of the FP7 BESTCILIA.

**Methods**

Patients, suspected for PCD, underwent diagnostic testing using a combination of tests including nNO, high speed video microscopy (HSVM) and transmission electron microscopy (TEM). We calculated sensitivity and specificity based on already reported optimal cut-offs [3,4] and constructed receiver operating characteristic curves (ROCs) for each of the two nNO methods (Figure 1 & 2).

**Results**

Out of 221 suspect patients that underwent diagnostic testing within a 3-year period, 54 were confirmed as PCD patients with TEM and/or HSVM. PCD patients had lower nNO compared to non-PCD both with CLD88sp (median 18.2 vs 156.8 nL/min) and NIXO MINO (median 9.9 vs 86.5 nL/min) (Figure 3). Diagnostic accuracy of the two methods is displayed in Table 1. In ROC analysis, the area under the curve (AUROC) was slightly higher for CLD88sp compared to NIXO MINO (AUROC 0.97 vs 0.93) (Figure 4). For the CLD88sp analyzer, a nNO cut-off of 96 nL/min had the best combination of sensitivity and specificity (Se= 90%, Sp= 91%) while for the NIXO MINO, the optimal cut-off was 31 nL/min (Se= 90%, Sp= 86%).

**Conclusions**

- The chemiluminescence method (Ecomedics CLD 88sp) had higher discriminative ability for PCD compared to the electrochemical method (NIXO MINO).
- Both methods were characterized by good and comparable diagnostic accuracy and can be used effectively in the clinical setting as part of PCD diagnostic work-up.

**Bibliography**