07.06 - Paediatric respiratory epidemiology

# 28899
# The Palestinian primary ciliary dyskinesia (PCD) cohort: clinical, diagnostic and genetic spectrum

Bronchiectasis, Orphan diseases, Genetics

**N. Rumman[1], M. Fassad[2], C. Driessens[3], P. Goggin [4], N. Abdelrahman[5], A. Adwan [6], J. Chopra[3], R. Doherty [4], B. Fashho [7], G. M. Freke [2], C. L. Jackson [3], M. Mohamed[2], R. A. Nema [8], M. P. Patel [2], R. Pengelly[9], A. Qaaqour [5], B. Rubbo[3], J. Thompson[3], G. Wheway[9], H. Mitchison[2], J. Lucas[3]**

**[1]Pediatric Dept, Makassed Hospital - East Jerusalem (Palestine), [2]Genetics and Genomic Medicine Department, University College London, UCL Great Ormond Street Institute of Child Health - London (United Kingdom), [3]Clinical and Experimental Sciences, University of Southampton Faculty of Medicine - Southampton (United Kingdom), [4]Biomedical Imaging Unit, University of Southampton Faculty of Medicine - Southampton (United Kingdom), [5]Makassed Hospital - East Jerusalem (Palestine), [6]Al-Quds University, School of Medicine - East Jerusalem (Palestine), [7]Caritas Hospital - Bethlehem (Palestine), [8]Al-Mustaqbal Medical Center - Hebron (Palestine), [9]Human Development and Health, University of Southampton Faculty of Medicine - Southampton (United Kingdom)**

**Background:** Diagnostic testing for PCD started in 2013 in Palestine. We aimed to describe the clinical, diagnostic and genetic spectrum of the Palestinian PCD cohort.

**Methods**: 390 individuals with symptoms suggestive of PCD and 74 family members underwent nasal nitric oxide (nNO); and/or transmission electron microscopy (TEM); and/or PCD genetic panel or whole exome testing. Clinical characteristics were collected close to diagnosis including FEV1 GLI z-scores and BMI z-scores.

**Results**: 82 had a definite positive PCD diagnosis (TEM and/or genetics) and 103 were highly likely (Kartagener's and/or low nNO). Positive cases (n=82) had median age of 13.5 years (range 0-43), were highly consanguineous (95%) and 100% Arabic descent. Clinical features included persistent wet cough (95%), neonatal respiratory distress (79%), clubbing (21%) and situs inversus (41%). Lung function at diagnosis was already impaired FEV1 z-score mean -1.49 (sd=1.79) and BMI z-score mean -0.30 SD=1.4. 69 families were genotyped. 59 individuals from 42 families (60%) had mutations in 14 PCD-genes; CCDC39 (26% of families), DNAH11 (17%) and LRRC6 (12%) were the most common. 16% had mutations

in candidate genes, 24% had no variants identified. 100% of variants were homozygous. TEM defects and genotype associations were as expected.

**Conclusions:** Despite limited local resources, collaborations during the last 7-years have facilitated detailed geno- and phenotyping of one of the largest PCD cohorts globally. nNO identifies likely cases and targeted genetic testing, conducted locally, can now identify specific mutations in known families.