investigate whether there was a sex difference in change in FEV₁ and BMI between 2008–2013, and if this difference could be explained by chronic *Pseudomonas aeruginosa* (cPsA) infection or CF-related diabetes (CFRD).

**Methods** Longitudinal analyses (2008–2013) compared male/female age at cPsA acquisition as well as FEV₁ and BMI differences between individuals with cPsA infection. Regression analysis examined for a difference in change in BMI and FEV₁ between the sexes depending on CFRD and cPsA status, adjusting for age, genotype and ethnicity. A survival analysis completed the sex comparison.

**Results** Females were significantly younger than males at the time of new cPsA infection (20.9 vs 22.4 years; p<0.001) with a lower mean BMI with new cPsA (21.3 vs 22.2 years; p<0.001) but no difference in FEV₁ at time of new cPsA. Females had greater decline in FEV₁ than males (8.2% vs 7.0% over 5 years; p<0.001), this was even greater in individuals with cPsA (10.2% vs 8.2% in males;p=0.002). Females had less of an increase in BMI than males (0.2 vs 0.6 in males;p<0.001), this was only seen in individuals with cPsA. Sex differences in change in BMI were also seen in the CFRD population. Overall, median survival for females was significantly less than males (39.5 vs 44.2 years, p<0.001). Females with CFRD had the worst survival overall. Males without cPsA had the greatest median survival while males with cPsA had similar survival to females irrespective of their cPsA status.

**Conclusions** Females had earlier cPsA infection and lower BMI. cPsA was associated with greater decline in FEV₁ and BMI in females than males, with worse survival in females with cPsA that was not seen in males with cPsA. CFRD was associated with less BMI increase in females, with females with CFRD having worse survival overall. These data suggest a measurable sex difference in clinically relevant CF outcomes in the UK population.

**References**