Prescription of drugs for obstructive lung diseases (ATC code R03) has previously been shown to be an indicator of actual asthma. In this cohort study, we have combined occupational information with data from redeemed prescriptions between 2000 and 2013 extracted from the National Danish Prescription register.

In 2003 a total of 7255 persons aged 20 and 44 years fulfilled a questionnaire, which among other things, included information on their longest held job. The jobs of 6470 were coded according to ISCO-88 and an asthma Job Exposure Matrix (JEM) was applied. Prevalent asthma was defined as at least two redeemed prescriptions of a R03 drug within 2 years. Incident asthma between 2003 and 2013 was defined as not having redeemed a R03 prescription in the previous years. Data was analyzed separately for each gender using multivariate logistic regression and presented as odds ratios (OR) with 95% confidence intervals (CI).

Among those having a job 327 (5.1%) were identified as incident cases and 467 (7.2%) as prevalent cases. In females increased incidences were seen in exposures to reactive low molecular weight (LMW) substances (OR 1.47 (95% CI 1.04–2.07)), cleaning agents (OR 1.52 (1.05–2.18)), metals (OR 3.31 (1.63–6.64)), while increased prevalence was seen with nitrile exposure (OR 4.41 (1.74–11.2)) and irritant gases (OR 1.76 (1.16–2.69)). In males no increased incidences were seen and only an increased prevalence with mixed environments (OR 2.24 (1.13–4.43)). In jobs increased prevalence and incidence were seen in female cleaners and drivers. Increased prevalence was seen in male printing workers.

Meaningful associations with well-known asthmogenic exposures in young adults with asthma can be identified in administrative register data, and implementing the analyses of register data from larger populations will have the power to detect potential increased risks due to rare exposures or changes in risk over time.

**Methods** We conducted a 1:10 case-control study using the Taiwanese Birth Registry database. Those male births reported to have hypospadias were defined as cases; while controls were randomly, matched by birth year, selected from those male births without any congenital anomaly. Monthly average of ambient air pollutants, including PM10, PM2.5, NO2, NOx, and O3, from three months pre- to six months post-conception were retrieved from the 76 air quality monitoring stations and interpolated to the level of township using empirical bayesian kriging. Potential covariates to be adjusted included gestational age, birth weight, birth season, maternal age, maternal diabetes and hypertension, maternal smoking, annual household income and population density of the residential township.

**Results** During 2007–2014, a total of 265 hypospadias was reported, and 230 (87%) of them were full-term births. Results of multivariate logistic regression models revealed that for per IQR increase of O3 (8.0 p.p.b) exposure during the first three months post-conception increased the risk of hypospadias (aOR=1.38, 95% CI=1.07–1.78). In subgroup analysis of full-term births, we further found that PM2.5 exposure during the first three months post-conception significantly increased the risk of developing hypospadias (aOR=1.29, 95% CI=1.01–1.65, per IQR=15.4 ug/m3).

**Conclusions** The results of the study suggested that early gestational exposure to ambient air pollution increased the risk of hypospadias occurrence.