Abstract P45 Table 1 Summary of explanatory variables, with hypothesis testing and crude (unadjusted) odds ratios by logistic regression

		Employed (n=548; 53%) ¹	Not employed (n=494; 47%) ¹	Hypothesis testing	Unadjusted ORs (95% CI) reference category=not employed
Age	Median (IQR)	44 (33–52)	45 (37–53)	$p=0.03$	0.98 (0.97–1.00); $p=0.01$
Female gender	Number (%)	367 (67)	383 (78)	$p<0.001$	0.59 (0.45–0.78); $p<0.001$
Ethnicity Caucasian	Number (%)	453 (84)	383 (79)	$p=0.03$	1.43 (1.04–1.96); $p=0.03$
IMD decile (ordinal)	Median (IQR)	5 (2–7)	3 (1–6)	$p<0.001$	1.19 (1.14–1.24); $p<0.001$ (per unit increase)
Current smokers	Number (%)	27 (5)	54 (11)	$p<0.001$	0.42 (0.26–0.68); $p<0.001$
BMI	Median (IQR)	30 (25–35)	33 (28–38)	$p<0.001$	0.96 (0.94–0.97); $p<0.001$
BMI <25	Number (%)	117 (23)	60 (13)	$p<0.001$	2.03 (1.44–2.85); $p<0.001$
Non-asthma related major co-morbidities ²	Number (%)	204 (37)	314 (64)	$p<0.001$	0.34 (0.26–0.44); $p<0.001$
HAD anxiety score (0–21)	Median (IQR)	7 (4–11)	11 (7–15)	$p<0.001$	0.89 (0.86–0.91); $p<0.001$
Abnormal HAD anxiety score (11–21)	Number (%)	113 (26)	187 (52)	$p<0.001$	0.32 (0.24–0.43); $p<0.001$
HAD depression score (0–21)	Median (IQR)	6 (4–9)	10 (7–13)	$p<0.001$	0.83 (0.80–0.86); $p<0.001$
Abnormal HAD depression score (11–21)	Number (%)	80 (18)	171 (48)	$p<0.001$	0.25 (0.18–0.34); $p<0.001$
ACQ7 total score (0–6) (ordinal)	Median (IQR)	3.0 (2.1–3.7)	4 (3.2–4.7)	$p<0.001$	0.52 (0.45–0.59); $p<0.001$
Adequate control (ACQ7 score=0–1)	Number (%)	26 (7)	6 (2)	$p<0.001$	4.12 (1.68–10.14); $p=0.002$
AQLQ total score (0=worse, 7=better) (ordinal)	Median (IQR)	3.9 (3.0–4.8)	2.9 (2.2–3.6)	$p<0.001$	1.84 (1.61–2.10); $p<0.001$
Pre-bronchodilator spirometry (% predicted FEV ₁)	Median (IQR)	80 (58–96)	70 (51–86)	$p<0.001$	1.01 (1.00–1.02); $p<0.001$
Maintenance oral corticosteroids	Number (%)	178 (34)	199 (42)	$p=0.007$	0.70 (0.54–0.91); $p=0.007$
Hospital admissions last 12 months	Median (IQR)	0 (0–2)	0 (0–3)	$p<0.001$	0.93 (0.89–0.97); $p<0.001$
Exacerbations requiring rescue oral corticosteroids last 12 months	Median (IQR)	5 (2–8)	6 (3–10)	$p=0.006$	0.97 (0.95–1.00); $p=0.05$

¹data missing for n=204. ²Includes pre-existing diagnosed anxiety, depression and psychosis. Hypothesis testing undertaken using chi-squared tests (categorical data), Mann-Whitney U-tests (non-parametric continuous data), tau-B (ordinal data). For continuous data, linear assumptions were tested using the Box-Tidwell transformation, prior to univariate logistic regression.

Results Data from 1246 patients were included; median age=44 (IQR=34–52), females=917 (74%), Caucasian ethnicity=1000 (80%), current smokers=97 (8%), median IMD decile=4 (2–7), median BMI=31 (26–35), 1 or more comorbidity=572 (46%), median%predicted FEV₁=74 (54–91). Univariate analyses of independent variables grouped by employment status (n=548 employed; 53%) are shown in the Table; there were no significant associations by disease phenotype (atopy, eosinophilic, non-eosinophilic). Multivariate binary logistic regression showed significant positive associations for IMD decile (OR=1.2, 95%CI=1.1–1.3) and AQLQ score (OR=1.5, 95%CI=1.2–1.9 per digit increase) with employment. Significant negative predictors were female gender (OR=0.5, 95%CI=0.3–0.8), major non-asthma related comorbidity (OR=0.5, 95%CI=0.3–0.7), maintenance oral corticosteroids (OR=0.5, 95%CI=0.3–0.8), and elevated HAD depression score (OR=0.5, 95%CI=0.3–0.8). The model was an adequate fit, explained 34% of the variance in employment (pseudo R²) and correctly classified 70% of cases.

Conclusion When socio-demographic factors are taken into account, asthma-related quality of life, absence of major comorbidity, low treatment burden, and good mental health are associated with employment. However, these may not fully explain workability, and other hitherto unidentified cultural factors should be explored.

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P46

DOES ASTHMA DURING PREGNANCY ACTUALLY FOLLOW THE 'ONE-THIRD' RULE?

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Introduction Traditionally, asthma in pregnancy is thought to follow a 'one-third rule' which states in patients with diagnosed asthma, during pregnancy one-third will see worsening symptoms, one-third will enjoy improved control, whilst one-third will experience no changes to their asthma symptoms.¹

We set out to test this theory using retrospective data analysis of data collected from a specialist obstetric asthma clinic.

Methods We carried out retrospective analysis of data collected from an obstetric asthma clinic over one year from October 2018 to October 2019 to assess whether patient's symptoms were better, unchanged or worse during their pregnancy. Data was reviewed from patients who were in at least their second pregnancy to allow for comparison between the current pregnancy and their earlier pregnancies.

Both subjective and objective symptom control was considered. Subjective control was determined by the patient's impression of their symptom burden, whilst objective control was determined by the number of steroid courses prescribed and the number of hospital admissions.

Results 48 patients were reviewed in the specialist obstetric asthma clinic, 28 of whom were in at least their second

Abstract P46 Table 1 Objective and subjective severity of asthma during pregnancy

Subjective control (compared to previous pregnancies)	Percentage of patients	No of steroid courses	Average number of steroid courses per patient	Number of admissions	Average number of admissions per patient
Better	18% (n=5)	1	0.2	1	0.2
Same	43% (n=12)	7	0.58	3	0.25
Worse	39% (n=11)	11	1	3	0.27

pregnancy. Of these patients, when compared to their previous pregnancies 18% reported better symptom control, 43% reported that their asthma remained unchanged and 39% reported worsening control.

Objective data on severity followed this pattern also. The mean number of steroid courses prescribed per patient was 0.2 in those who reported better control, 0.58 in those who reported no change to control, and 1 in those reporting worsening symptoms. Similarly, the number of average number of admissions per patient increased in accordance with subjective severity.

Conclusions Our analysis confirms that asthma control in pregnancy does not follow the simple one-third rule as previously speculated. When using subjective and objective measurements, a greater proportion of patients experienced either worsening asthma control or no changes to control during pregnancy, with only a small percentage reporting that their asthma improved.

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P47 A PILOT STUDY FOR AN ASTHMA IN PREGNANCY SERVICE WITHIN A UK TERTIARY CENTRE

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Background Suboptimal asthma control has implications for maternal and neonatal health, preterm labour and instrumental birth. An *Asthma in Pregnancy Clinic* was initiated to support our tertiary obstetric centre, to assess maternal asthma demographics and record foetal outcomes with a view to further development of an Asthma in Pregnancy Service.

Method A retrospective analysis was performed for patients referred to clinic between July 2018 and February 2021. Data were collated for population demographics, asthma severity, treatment optimisation and foetal outcome. Birth weight and delivery method were used as crude measures of foetal outcome.

Results 99 consecutive referrals to the clinic were reviewed (mean age 30 ± 5.9 years, Caucasian ethnicity 64%; 11% smoking prevalence). At baseline, 52% had moderate asthma as graded by the asthma severity/treatment guidelines¹; 72% were taking inhaled corticosteroids; 24% had raised serum eosinophils ($>0.34 \times 10^9/L$); only 5% had FeNO >50 parts per billion (ppb) at presentation.

10% required no change to their existing asthma treatment regimen once adherence was optimised. 62% had inhaled therapies escalated and 17% required oral prednisolone during their pregnancy.

55% had significant reflux symptoms. In a subgroup analysis, there was statistically significant improvement in asthma control as per GINA following reflux treatment optimisation; $2.38(1.5)$ to $2.21(1.4)$, $p < 0.001$.

83% of patients had full term births with a mean foetal weight 3205(589) grams. Foetal birth weight and delivery method were not significantly related to oral or inhaled corticosteroid use.

Conclusion This pilot demonstrates that an Asthma in Pregnancy Clinic in a tertiary centre is both feasible and

Abstract P47 Table 1 Demographics of study cohort

Demographics (n=99)	Result (mean $\pm$ SD)
Age (years)	30.3($\pm$ 5.9)
Ethnicity	64% Caucasian, 35% BAME
Stage of pregnancy at referral	1st trimester 26%; 2nd trimester 64%; 3rd trimester 9%
FEV ₁ (L)	2.48($\pm$ 0.47)
Serum eosinophil count ($\times 10^9/L$)	0.31($\pm$ 0.12) n=24 (24%) n=8 (8%)
Eosinophil count >0.34	
Eosinophil count ≥ 0.6	
FeNO (ppb) (median/IQR)	21(11–30) n=5 (5%)
FeNO > 50 ppb	
Foetal birth weight (BW) (g)	3205($\pm$ 589)
Local average birthweight (BW) (g)	3247
Delivery method	18% instrumental, 38% CS
Local annual CS rate	35.1%

Abbreviations used:

BAME Black Asian and Minority Ethnic; FEV₁ forced expiratory Volume in one second; FeNO fractional exhaled nitric oxide; CS caesarean section

efficacious with a significant proportion requiring asthma treatment optimisation. However, simple measures (education, enhancing therapy compliance) remains essential. Optimisation of anti-reflux treatment significantly improved GINA scores, highlighting the importance of adequate reflux management in pregnant asthmatics.

The Asthma in Pregnancy Clinic is the first step in developing a dedicated multi-disciplinary service to support pregnant asthmatics. This pilot has highlighted the importance of standardised paperwork and rigorous data collection to provide up-to-date and locally relevant improvements in clinical outcomes.

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P48 LONG-TERM EFFICACY OF DUPILUMAB IN PATIENTS WITH MODERATE-TO-SEVERE ASTHMA IN THE LIBERTY ASTHMA TRAVERSE OPEN-LABEL EXTENSION STUDY: IMPROVEMENTS IN ASTHMA CONTROL AND HEALTH-RELATED QUALITY OF LIFE

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Introduction and Objectives For asthma patients, achieving asthma control and improving health-related quality of life (HRQoL) are important long-term management goals. Dupilumab is a monoclonal antibody targeting interleukin-4 and interleukin-13, key and central drivers of type 2 inflammation