Table S1. Maternal baseline characteristics and outcomes for 527 women included in analysis. Data are n (%), unless otherwise indicated; N is equal to the total number of participants in the group, unless otherwise indicated; <1% of observations are missing, unless indicated.

	Ursodeoxycholic acid (n = 271)	**Placebo (n = 256)**
Baseline characteristics		
Age, years	30.6 (5.7)	30.5 (5.2)
Ethnic group		
White	224 (82%)	212 (83%)
Black	8 (3%)	7 (3%)
Asian	28 (10%)	32 (13%)
Other	9 (3%)	5 (2%)
Not known	2 (1%)	0 (0%)
Body-mass index at start of pregnancy (kg/m²), mean (SD)	27.5 (6.5)	26.9 (6.2)
Previous pregnancy of ≥24 weeks' gestation	162 (60%)	169 (66%)
History of intrahepatic cholestasis of pregnancy, n/N (%)	87/159 (55%)	81/167 (49%)
Missing, n	3	2
Gestational age (weeks), median (IQR)	34.1 (31.9–35.4)	34.1 (30.7–35.6)
<34 weeks	130 (48%)	124 (48%)
34 to <37 weeks	125 (46%)	115 (57%)
≥37 weeks	16 (6%)	17 (7%)
Twin pregnancy	17 (6%)	14 (5%)
Itch score, mean (SD)	56.4 (24.7)	59.1 (25.2)
Highest baseline serum concentration before randomisation		
Bile acid (µmol/L), geometric mean (95% CI)	27.7 (25.5–30.1)	26.2 (24.1–28.3)
<40 µmol/L	209 (77%)	199 (78%)
≥40 µmol/L	62 (23%)	57 (22%)
Alanine transaminase, N	254	246
Alanine transaminase (U/L), geometric mean (95% CI)	68.7 (59.8–78.9)	56.6 (48.8–65.5)
Outcomes		
Maximum dose of trial medication		
One tablet once a day	4 (1%)	4 (2%)
One tablet twice a day	171 (63%)	158 (62%)
One tablet three times a day	61 (23%)	62 (24%)
Two tablets twice a day	35 (13%)	32 (13%)
Mode of onset of labour		
Spontaneous	27 (10%)	40 (16%)
Induced or pre-labour rupture of membranes and stimulation	194 (72%)	177 (69%)
Pre-labour caesarean	50 (18%)	39 (15%)
Estimated blood loss at delivery, mL	350 (250–600)	400 (250–600)
<500	175 (65%)	162 (63%)
≥500 and <1000	69 (25%)	65 (25%)
≥1000	27 (10%)	29 (11%)

Table S2. Perinatal outcomes for 558 infants born to 527 women included in analysis. Data are n (%), median (IQR), or mean (SD), unless otherwise indicated; N is equal to the total number of infants in the group, unless otherwise indicated; <1% of observations are missing, unless otherwise indicated.

	Ursodeoxycholic acid (n = 288)	**Placebo (n = 270)**
Perinatal death, preterm delivery or neonatal unit admission	63 (22%)	68 (25%)
In-utero fetal death	1 (<1%)	2 (1%)
Preterm delivery	46 (16%)	49 (18%)
Known neonatal death up to 7 days after birth	0 (0%)	0 (0%)
Neonatal unit admission for >4 h	38 (13%)	46 (17%)
Gestational age at delivery, weeks	37.6 (37.1–38.1)	37.4 (37.1–38.1)
Birthweight, g	3100 (2795–3392)	3055 (2740–3330)
Mode of delivery		
Spontaneous vaginal (cephalic)	174 (60%)	152 (56%)
Vaginal (breech)	1 (<1%)	3 (1%)
Assisted vaginal (cephalic)	18 (6%)	32 (12%)
Pre-labour caesarean	64 (22%)	54 (20%)
Caesarean	31 (11%)	29 (11%)
Presence of meconium-stained amniotic fluid	29 (10%)	46 (17%)

Table S3. Demographics of MCID survey respondents.

		All women (n = 650)
Experience	I am or have been pregnant and have been diagnosed with ICP	450 (73%)
	I am or have been pregnant but have never been diagnosed with ICP	153 (25%)
	Neither of the above	17 (3%)
		Women with experience of ICP (n = 450)
Age	18–24	26 (6%)
	25–34	228 (51%)
	35–44	176 (39%)
	45–54	17 (4%)
	55+	3 (1%)
		Clinicians (n = 116)
Age	18–24	1 (1%)
	25–34	16 (14%)
	35–44	48 (41%)
	45–54	39 (34%)
	55–64	11 (9%)
	65+	1 (1%)
Gender	Female	95 (82%)
	Male	20 (17%)
	Other	1 (1%)

Table S4. Sensitivity analysis excluding women whose adherence to the intervention was less than 90% of trial medication taken, consistently reported.

	UDCA (n = 205)	Placebo (n = 181)	Adjusted effects estimate (95% CI), p value	Interaction test
Bile acid concentration, all women, N	195	173		
Bile acid concentration (µmol/L), geometric mean (SD)	22.2 (2.3)	17.9 (2.7)	GMR 1.20 (1.01 to 1.42) p = 0.036	
Baseline bile acid conc. <40 µmol/L, N	152	135		
Bile acid concentration (µmol/L), geometric mean (SD)	19.3 (2.2)	15.6 (2.5)	GMR 1.20 (1.00 to 1.45) p = 0.055	p = 0.718
Baseline bile acid conc. ≥40 µmol/L, N	43	38		
Bile acid concentration (µmol/L), geometric mean (SD)	36.5 (2.0)	29.6 (2.9)	GMR 1.20 (0.81 to 1.77) p = 0.369	
Baseline bile acid conc. <100 µmol/L, N	183	166		
Bile acid concentration (µmol/L), geometric mean (SD)	21.3 (2.2)	17.2 (2.6)	GMR 1.22 (1.03 to 1.46) p = 0.025	p = 0.417
Baseline bile acid conc. ≥100 µmol/L, N	12	7		
Bile acid concentration (µmol/L), geometric mean (SD)	43.5 (2.3)	51.1 (2.6)	GMR 0.90 (0.40 to 2.01) p = 0.793	
Itch score, all women, N	191	168		
Itch score (mm), mean (SD)	49.7 (25.5)	55.6 (26.7)	MD -4.65 (-9.50 to 0.19) p = 0.060	
Baseline itch score <60 mm, N	86	67		
Itch score (mm), mean (SD)	40.7 (24.3)	44.9 (24.1)	MD -4.81 (-11.95 to 2.34) p = 0.189	p = 0.975
Baseline itch score ≥60 mm, N	105	101		
Itch score (mm), mean (SD)	57.2 (24.1)	62.6 (26.0)	MD -4.46 (-11.22 to 1.94) p = 0.168	
Baseline bile acid conc. <40 µmol/L, N	151	134		
Itch score (mm), mean (SD)	50.3 (26.0)	55.3 (26.5)	MD -4.05 (-9.46 to 1.35) p = 0.143	p = 0.668
Baseline bile acid conc. ≥40 µmol/L, N	40	34		
Itch score (mm), mean (SD)	47.6 (23.6)	56.5 (27.5)	MD -6.92 (-17.93 to 4.09) p = 0.222	
Baseline bile acid conc. <100 µmol/L, N	182	162		
Itch score (mm), mean (SD)	49.8 (25.6)	55.9 (26.4)	MD -5.08 (-9.93 to -0.22) p = 0.041	p = 0.257
Baseline bile acid conc. ≥100 µmol/L, N	9	6		
Itch score (mm), mean (SD)	49.1 (24.0)	47.5 (34.5)	MD -8.07 (-40.92 to 24.78) p = 0.639	