

Additional file 4. Baseline characteristics for patients with liver disease

	ALD			Autoimmune liver disease			HBV			HCV			NAFLD		
	Men	Women	Overall	Men	Women	Overall	Men	Women	Overall	Men	Women	Overall	Men	Women	Overall
n	8560	4285	12845	482	1728	2210	1019	734	1753	2135	977	3112	10751	10177	20928
Practice region (%)															
North East	285 (3.3)	141 (3.3)	426 (3.3)	12 (2.5)	65 (3.8)	77 (3.5)	17 (1.7)	12 (1.6)	29 (1.7)	52 (2.4)	24 (2.5)	76 (2.4)	301 (2.8)	318 (3.1)	619 (3.0)
North West	1929 (22.5)	1007 (23.5)	2936 (22.9)	87 (18.0)	343 (19.8)	430 (19.5)	199 (19.5)	123 (16.8)	322 (18.4)	537 (25.2)	214 (21.9)	751 (24.1)	2238 (20.8)	2045 (20.1)	4283 (20.5)
Yorkshire & The Humber	374 (4.4)	200 (4.7)	574 (4.5)	16 (3.3)	92 (5.3)	108 (4.9)	26 (2.6)	21 (2.9)	47 (2.7)	81 (3.8)	32 (3.3)	113 (3.6)	386 (3.6)	358 (3.5)	744 (3.6)
East Midlands	327 (3.8)	174 (4.1)	501 (3.9)	23 (4.8)	66 (3.8)	89 (4.0)	26 (2.6)	27 (3.7)	53 (3.0)	69 (3.2)	40 (4.1)	109 (3.5)	306 (2.8)	292 (2.9)	598 (2.9)
West Midlands	1065 (12.4)	550 (12.8)	1615 (12.6)	47 (9.8)	188 (10.9)	235 (10.6)	87 (8.5)	79 (10.8)	166 (9.5)	162 (7.6)	79 (8.1)	241 (7.7)	992 (9.2)	946 (9.3)	1938 (9.3)
East of England	758 (8.9)	390 (9.1)	1148 (8.9)	54 (11.2)	182 (10.5)	236 (10.7)	84 (8.2)	61 (8.3)	145 (8.3)	206 (9.6)	104 (10.6)	310 (10.0)	1010 (9.4)	966 (9.5)	1976 (9.4)
South West	1074 (12.5)	517 (12.1)	1591 (12.4)	65 (13.5)	218 (12.6)	283 (12.8)	118 (11.6)	70 (9.5)	188 (10.7)	299 (14.0)	147 (15.0)	446 (14.3)	1241 (11.5)	1239 (12.2)	2480 (11.9)
South Central	897 (10.5)	436 (10.2)	1333 (10.4)	62 (12.9)	177 (10.2)	239 (10.8)	90 (8.8)	72 (9.8)	162 (9.2)	224 (10.5)	111 (11.4)	335 (10.8)	1112 (10.3)	1040 (10.2)	2152 (10.3)
London	979 (11.4)	411 (9.6)	1390 (10.8)	48 (10.0)	175 (10.1)	223 (10.1)	283 (27.8)	202 (27.5)	485 (27.7)	337 (15.8)	149 (15.3)	486 (15.6)	1762 (16.4)	1599 (15.7)	3361 (16.1)
South East Coast	872 (10.2)	459 (10.7)	1331 (10.4)	68 (14.1)	222 (12.8)	290 (13.1)	89 (8.7)	67 (9.1)	156 (8.9)	168 (7.9)	77 (7.9)	245 (7.9)	1403 (13.0)	1374 (13.5)	2777 (13.3)
Age (years, median [IQR])	54.92 [46.71, 63.26]	54.52 [46.54, 62.95]	54.83 [46.63, 63.14]	62.47 [50.49, 71.72]	63.49 [53.41, 72.93]	63.29 [53.06, 72.59]	49.60 [41.05, 58.63]	43.14 [36.45, 54.33]	47.10 [38.32, 57.00]	46.75 [39.70, 54.75]	46.09 [38.51, 55.92]	46.50 [39.29, 54.96]	55.80 [46.58, 65.67]	57.76 [48.92, 67.55]	56.79 [47.77, 66.56]
Age categories (%)															
30 - 39	886 (10.4)	418 (9.8)	1304 (10.2)	36 (7.5)	107 (6.2)	143 (6.5)	231 (22.7)	288 (39.2)	519 (29.6)	560 (26.2)	294 (30.1)	854 (27.4)	1196 (11.1)	912 (9.0)	2108 (10.1)
40 - 49	2053 (24.0)	1093 (25.5)	3146 (24.5)	76 (15.8)	211 (12.2)	287 (13.0)	293 (28.8)	200 (27.2)	493 (28.1)	727 (34.1)	302 (30.9)	1029 (33.1)	2415 (22.5)	1869 (18.4)	4284 (20.5)
50 - 59	2674 (31.2)	1344 (31.4)	4018 (31.3)	101 (21.0)	385 (22.3)	486 (22.0)	276 (27.1)	135 (18.4)	411 (23.4)	567 (26.6)	199 (20.4)	766 (24.6)	2984 (27.8)	2979 (29.3)	5963 (28.5)
60 - 69	2068 (24.2)	963 (22.5)	3031 (23.6)	125 (25.9)	473 (27.4)	598 (27.1)	138 (13.5)	66 (9.0)	204 (11.6)	199 (9.3)	117 (12.0)	316 (10.2)	2467 (22.9)	2396 (23.5)	4863 (23.2)
70 - 79	727 (8.5)	385 (9.0)	1112 (8.7)	108 (22.4)	395 (22.9)	503 (22.8)	57 (5.6)	31 (4.2)	88 (5.0)	64 (3.0)	46 (4.7)	110 (3.5)	1316 (12.2)	1461 (14.4)	2777 (13.3)
80 & above	152 (1.8)	82 (1.9)	234 (1.8)	36 (7.5)	157 (9.1)	193 (8.7)	24 (2.4)	14 (1.9)	38 (2.2)	18 (0.8)	19 (1.9)	37 (1.2)	373 (3.5)	560 (5.5)	933 (4.5)
BMI ≥ 30 kg/m2 (%)	1840 (21.5)	763 (17.8)	2603 (20.3)	82 (17.0)	417 (24.1)	499 (22.6)	164 (16.1)	141 (19.2)	305 (17.4)	248 (11.6)	170 (17.4)	418 (13.4)	4385 (40.8)	5367 (52.7)	9752 (46.6)
Smoking (%)															
Non smoker	1653 (19.3)	986 (23.0)	2639 (20.5)	195 (40.5)	732 (42.4)	927 (41.9)	323 (31.7)	362 (49.3)	685 (39.1)	222 (10.4)	226 (23.1)	448 (14.4)	4002 (37.2)	4874 (47.9)	8876 (42.4)
Current smoker	4487 (52.4)	2316 (54.0)	6803 (53.0)	95 (19.7)	405 (23.4)	500 (22.6)	353 (34.6)	152 (20.7)	505 (28.8)	1453 (68.1)	539 (55.2)	1992 (64.0)	3175 (29.5)	2456 (24.1)	5631 (26.9)
Ex or current smoker	9 (0.1)	5 (0.1)	14 (0.1)	2 (0.4)	2 (0.1)	4 (0.2)	0 (0.0)	1 (0.1)	1 (0.1)	2 (0.1)	0 (0.0)	2 (0.1)	9 (0.1)	8 (0.1)	17 (0.1)
Ex smoker	1973 (23.0)	810 (18.9)	2783 (21.7)	174 (36.1)	526 (30.4)	700 (31.7)	260 (25.5)	176 (24.0)	436 (24.9)	319 (14.9)	162 (16.6)	481 (15.5)	3434 (31.9)	2763 (27.1)	6197 (29.6)
No smoking information	438 (5.1)	168 (3.9)	606 (4.7)	16 (3.3)	63 (3.6)	79 (3.6)	83 (8.1)	43 (5.9)	126 (7.2)	139 (6.5)	50 (5.1)	189 (6.1)	131 (1.2)	76 (0.7)	207 (1.0)
Comorbidities															
Barrett's oesophagus (%)	104 (1.2)	30 (0.7)	134 (1.0)	8 (1.7)	12 (0.7)	20 (0.9)	5 (0.5)	1 (0.1)	6 (0.3)	13 (0.6)	3 (0.3)	16 (0.5)	176 (1.6)	98 (1.0)	274 (1.3)
Crohn's disease (%)	29 (0.3)	25 (0.6)	54 (0.4)	23 (4.8)	25 (1.4)	48 (2.2)	5 (0.5)	6 (0.8)	11 (0.6)	7 (0.3)	3 (0.3)	10 (0.3)	107 (1.0)	120 (1.2)	227 (1.1)
Diabetes mellitus (%)	1149 (13.4)	427 (10.0)	1576 (12.3)	82 (17.0)	226 (13.1)	308 (13.9)	127 (12.5)	66 (9.0)	193 (11.0)	183 (8.6)	79 (8.1)	262 (8.4)	2469 (23.0)	2553 (25.1)	5022 (24.0)
Complications of diabetes (%)	270 (3.2)	82 (1.9)	352 (2.7)	29 (6.0)	62 (3.6)	91 (4.1)	23 (2.3)	10 (1.4)	33 (1.9)	49 (2.3)	23 (2.4)	72 (2.3)	691 (6.4)	652 (6.4)	1343 (6.4)
Diverticular disease of intestine (%)	278 (3.2)	152 (3.5)	430 (3.3)	23 (4.8)	123 (7.1)	146 (6.6)	18 (1.8)	14 (1.9)	32 (1.8)	17 (0.8)	21 (2.1)	38 (1.2)	591 (5.5)	848 (8.3)	1439 (6.9)
Dyslipidaemia (%)	940 (11.0)	390 (9.1)	1330 (10.4)	54 (11.2)	218 (12.6)	272 (12.3)	76 (7.5)	37 (5.0)	113 (6.4)	71 (3.3)	36 (3.7)	107 (3.4)	1972 (18.3)	1875 (18.4)	3847 (18.4)
Gastro-oesophageal reflux disease (%)	871 (10.2)	446 (10.4)	1317 (10.3)	56 (11.6)	221 (12.8)	277 (12.5)	77 (7.6)	52 (7.1)	129 (7.4)	162 (7.6)	81 (8.3)	243 (7.8)	1650 (15.3)	2088 (20.5)	3738 (17.9)
Hypertension (%)	2423 (28.3)	1095 (25.6)	3518 (27.4)	128 (26.6)	536 (31.0)	664 (30.0)	168 (16.5)	101 (13.8)	269 (15.3)	231 (10.8)	120 (12.3)	351 (11.3)	3704 (34.5)	3629 (35.7)	7333 (35.0)
Irritable bowel syndrome (%)	289 (3.4)	408 (9.5)	697 (5.4)	27 (5.6)	201 (11.6)	228 (10.3)	45 (4.4)	40 (5.4)	85 (4.8)	59 (2.8)	83 (8.5)	142 (4.6)	745 (6.9)	1775 (17.4)	2520 (12.0)
Jaundice (%)	627 (7.3)	434 (10.1)	1061 (8.3)	80 (16.6)	176 (10.2)	256 (11.6)	72 (7.1)	28 (3.8)	100 (5.7)	77 (3.6)	38 (3.9)	115 (3.7)	257 (2.4)	213 (2.1)	470 (2.2)
Proteinuric kidney diseases (%)	60 (0.7)	18 (0.4)	78 (0.6)	10 (2.1)	15 (0.9)	25 (1.1)	16 (1.6)	10 (1.4)	26 (1.5)	30 (1.4)	10 (1.0)	40 (1.3)	133 (1.2)	117 (1.1)	250 (1.2)
Oesophagitis and oesophageal ulcer (%)	755 (8.8)	340 (7.9)	1095 (8.5)	45 (9.3)	148 (8.6)	193 (8.7)	57 (5.6)	24 (3.3)	81 (4.6)	122 (5.7)	44 (4.5)	166 (5.3)	1103 (10.3)	1233 (12.1)	2336 (11.2)
Proteinuria (%)	2927 (34.2)	1553 (36.2)	4480 (34.9)	213 (44.2)	861 (49.8)	1074 (48.6)	375 (36.8)	296 (40.3)	671 (38.3)	597 (28.0)	383 (39.2)	980 (31.5)	5300 (49.3)	6075 (59.7)	11375 (54.4)
Renal disease (%)	339 (4.0)	218 (5.1)	557 (4.3)	46 (9.5)	194 (11.2)	240 (10.9)	72 (7.1)	45 (6.1)	117 (6.7)	87 (4.1)	62 (6.3)	149 (4.8)	872 (8.1)	1377 (13.5)	2249 (10.7)
Biomarkers															
Albumin < 35 g/L (%)	1378 (16.1)	882 (20.6)	2260 (17.6)	75 (15.6)	217 (12.6)	292 (13.2)	62 (6.1)	37 (5.0)	99 (5.6)	142 (6.7)	73 (7.5)	215 (6.9)	438 (4.1)	516 (5.1)	954 (4.6)
Alanine aminotransferase ≥ 35 U/L (%)	1527 (17.8)	650 (15.2)	2177 (16.9)	119 (24.7)	395 (22.9)	514 (23.3)	118 (11.6)	44 (6.0)	162 (9.2)	315 (14.8)	129 (13.2)	444 (14.3)	1605 (14.9)	920 (9.0)	2525 (12.1)
Aspartate transaminase ≥ 40 U/L (%)	570 (6.7)	298 (7.0)	868 (6.8)	39 (8.1)	138 (8.0)	177 (8.0)	41 (4.0)	17 (2.3)	58 (3.3)	85 (4.0)	44 (4.5)	129 (4.1)	327 (3.0)	233 (2.3)	560 (2.7)
Bilirubin ≥ 34.2 μmol/L (%)	1043 (12.2)	657 (15.3)	1700 (13.2)	65 (13.5)	141 (8.2)	206 (9.3)	66 (6.5)	17 (2.3)	83 (4.7)	77 (3.6)	26 (2.7)	103 (3.3)	306 (2.8)	183 (1.8)	489 (2.3)
C reactive protein ≥ 10 mg/L (%)	475 (5.5)	301 (7.0)	776 (6.0)	48 (10.0)	160 (9.3)	208 (9.4)	41 (4.0)	15 (2.0)	56 (3.2)	47 (2.2)	27 (2.8)	74 (2.4)	483 (4.5)	696 (6.8)	1179 (5.6)
Gamma- glutamyltransferase ≥ 48 U/L (%)	1777 (20.8)	852 (19.9)	2629 (20.5)	110 (22.8)	392 (22.7)	502 (22.7)	64 (6.3)	24 (3.3)	88 (5.0)	186 (8.7)	75 (7.7)	261 (8.4)	1157 (10.8)	765 (7.5)	1922 (9.2)
International Normalized Ratio ≥ 1.7 (%)	59 (0.7)	21 (0.5)	80 (0.6)	8 (1.7)	10 (0.6)	18 (0.8)	4 (0.4)	2 (0.3)	6 (0.3)	9 (0.4)	6 (0.6)	15 (0.5)	94 (0.9)	68 (0.7)	162 (0.8)
Platelet ≤ 150 10^9/L (%)	1460 (17.1)	599 (14.0)	2059 (16.0)	55 (11.4)	145 (8.4)	200 (9.0)	89 (8.7)	28 (3.8)	117 (6.7)	222 (10.4)	75 (7.7)	297 (9.5)	618 (5.7)	305 (3.0)	923 (4.4)
Triglycerides ≥ 2 mmol/L (%)	578 (6.8)	200 (4.7)	778 (6.1)	25 (5.2)	67 (3.9)	92 (4.2)	31 (3.0)	11 (1.5)	42 (2.4)	50 (2.3)	15 (1.5)	65 (2.1)	1483 (13.8)	1075 (10.6)	2558 (12.2)