

Supplementary Materials: Variants in *COMT*, *CYP3A5*, *CYP2B6*, and *ABCG2* Alter Quetiapine Pharmacokinetics

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Table S1. Pharmacokinetic parameters based on CYP2D6 phenotype.

CYP2D6 Phenotype	n	AUC _{0-∞} /DW (kg ng h/mL mg)	SD	C _{max} /DW (kg ng/mL mg)	SD	t _{max} (h)	SD	t _{1/2} (h)	SD	V _d /F _w (L/kg)	SD	Cl/F _w (L/h kg)	SD
UM	5	570.24	239.69	224.9	143.35	1.7	1.88	4.85	0.54	14.28	6.82	2.08	1.02
NM	13	716.72	448.37	192.73	86.27	0.99	0.43	4.77	1.11	12.82	8.03	1.93	1.14
IM	28	818.73	366.5	207.04	86.58	1.49	0.96	5.08	1.29	10.59	4.55	1.59	0.97
PM	3	496.15	238.28	150.56	61.11	0.78	0.25	5.13	0.71	18.55	11.87	2.47	1.36
Total	49	746.56	378.69	201.61	90.57	1.34	0.97	4.98	1.14	12.05	6.49	1.78	1.04

UM: ultrarapid metabolizer; NM: normal metabolizer; IM: intermediate metabolizer; PM: poor metabolizer.

Table S2. Pharmacokinetic parameters based on genotypes and phenotypes without statistically significant associations.

Genotype or phenotype	N	AUC _{0-∞} /DW (kg*ng*h/mL mg)			C _{max} /DW (kg*ng/mL mg)		t _{max} (h)		t _{1/2} (h)		V _d /F _w (L/kg)		Cl/F _w (L/h*kg)	
		Mean	SD		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
<i>ABCB1</i> rs1128503 (C1236T)	CC	19	722.34	360.38	195.60	84.62	1.21	1.08	5.11	0.81	13.11	7.59	1.81	1.01
	CT	20	771.22	426.79	202.28	96.15	1.40	0.83	5.05	1.41	11.18	3.62	1.75	1.05
	TT	10	743.29	343.47	211.68	98.60	1.44	1.09	4.60	1.13	11.77	8.80	1.78	1.20
<i>ABCB1</i> rs1128503 (C3435T)	CC	18	649.45	300.93	182.96	80.42	1.22	1.09	5.00	0.86	13.79	7.48	1.93	0.97
	CT	22	869.78	446.26	218.38	94.91	1.50	0.99	5.06	1.35	10.07	3.68	1.57	1.04
	TT	9	639.59	263.45	197.93	101.30	1.18	0.65	4.74	1.19	13.38	8.86	1.98	1.19
<i>ABCB1</i> rs2032582 (G2677T/A)	GG	14	830.75	395.44	215.02	70.53	1.38	1.28	5.11	0.86	10.76	5.14	1.52	0.80
	GA	19	795.14	437.36	206.88	101.19	1.47	0.92	4.88	1.46	10.69	3.95	1.73	1.08
	GT	8	597.98	260.63	161.49	86.63	1.11	0.83	5.23	0.65	16.01	9.30	2.11	1.15
	AA	7	635.39	290.63	212.06	111.00	1.12	0.70	4.70	1.33	13.78	9.88	2.07	1.34
	AT	1	611.86	0.00	161.42	0.00	1.50	0.00	4.97	0.00	11.89	0.00	1.65	0.00
<i>ABCC2</i> rs2273697	GG	35	686.31	309.95	197.55	85.00	1.23	0.81	4.86	1.13	12.37	6.53	1.88	1.08
	GA	13	854.30	486.26	204.89	107.06	1.62	1.34	5.04	0.78	11.46	6.77	1.60	0.94
	AA	1	1455.04	0.00	300.92	0.00	1.34	0.00	8.42	0.00	8.44	0.00	0.69	0.00
<i>COMT</i> rs4680	GG	26	711.44	317.25	199.00	98.68	1.43	1.13	4.94	0.83	12.43	6.62	1.79	0.98
	GA	12	798.67	413.23	213.80	76.35	1.20	0.55	5.07	1.54	11.42	7.50	1.69	1.12
	AA	11	772.74	491.61	194.47	91.46	1.28	0.99	4.96	1.39	11.83	5.43	1.86	1.20
<i>CYP1A2*1B</i> rs2470890	*1/*1	7	816.67	358.84	197.68	83.48	1.12	0.85	5.32	1.06	11.44	6.10	1.55	0.92
	*1/*1B	22	760.98	463.01	206.62	110.93	1.54	1.25	4.73	1.01	12.83	8.77	1.95	1.31
	*1B/*1B	20	706.17	284.45	197.48	69.79	1.20	0.59	5.14	1.30	11.40	2.87	1.67	0.71
<i>CYP1A2*1C</i> rs2069514	*1/*1	27	745.07	437.37	195.08	99.26	1.47	1.11	4.94	1.03	13.23	8.18	1.94	1.24
	*1/*1C	16	755.39	267.94	223.35	79.44	1.13	0.88	4.84	1.11	9.92	2.77	1.50	0.53
	*1C/*1C	6	729.76	407.46	173.02	76.56	1.28	0.23	5.51	1.72	12.40	3.33	1.82	1.08
<i>CYP1A2*1F</i> rs762551	*1/*1	25	737.44	347.97	189.63	86.32	1.28	1.05	5.23	1.14	12.69	6.84	1.77	1.00
	*1/*1F	22	753.04	430.54	216.40	98.97	1.37	0.94	4.61	1.10	11.40	6.43	1.83	1.14
	*1F/*1F	2	789.45	279.71	188.62	22.29	1.75	0.35	5.82	0.73	11.23	2.77	1.39	0.53
<i>CYP2A6*9</i> rs28399433	*1/*1	39	769.66	406.13	207.07	95.29	1.37	1.03	4.97	1.22	11.96	6.86	1.79	1.11
	*1/*9	6	718.89	253.92	158.63	33.85	1.46	0.83	5.09	0.92	11.07	3.38	1.56	0.57
	*9/*9	4	562.94	210.69	212.87	100.39	0.81	0.14	4.89	0.75	14.35	6.97	2.05	0.98
<i>CYP2C19</i> phenotype	UM	1	987.23	0.00	204.39	0.00	1.50	0.00	6.34	0.00	9.27	0.00	1.01	0.00
	RM	11	663.42	267.97	200.30	65.50	1.15	0.56	5.06	0.80	13.31	7.16	1.82	0.87
	NM	32	764.12	406.23	199.73	98.99	1.38	1.11	4.83	0.99	11.73	6.77	1.76	1.03
	IM	4	909.53	411.59	258.80	55.46	1.04	0.21	6.37	1.49	11.37	4.12	1.30	0.58
	PM	1	206.75	0.00	44.62	0.00	3.00	0.00	1.98	0.00	13.85	0.00	4.84	0.00

CYP2C8*2 rs11572103	*1/*1	48	745.05	382.55	197.46	86.69	1.35	0.97	4.98	1.16	12.11	6.54	1.79	1.05
	*1/*2	1	819.30	0.00	400.83	0.00	0.50	0.00	5.07	0.00	8.93	0.00	1.22	0.00
CYP2C8*3	*1/*1	37	686.68	334.67	192.16	84.43	1.26	0.88	4.84	1.11	12.20	5.73	1.85	0.97
	*1/*3	11	996.50	417.97	245.88	96.63	1.63	1.28	5.46	1.25	9.55	5.36	1.27	0.80
	*3/*3	1	213.10	0.00	64.21	0.00	1.00	0.00	4.94	0.00	34.01	0.00	4.78	0.00
CYP2C8*4 rs1058930	*1/*1	48	746.53	382.70	200.82	91.36	1.35	0.98	4.98	1.16	12.10	6.55	1.79	1.05
	*1/*4	1	747.96	0.00	239.36	0.00	0.84	0.00	5.00	0.00	9.64	0.00	1.34	0.00
CYP2C9 phenotype	NM	1	819.30	0.00	400.83	0.00	0.50	0.00	5.07	0.00	8.93	0.00	1.22	0.00
	IM	13	854.22	438.46	217.11	90.81	1.32	0.92	5.51	1.28	12.36	8.05	1.66	1.21
	PM	35	704.50	358.05	190.16	85.30	1.37	1.01	4.78	1.06	12.02	6.01	1.84	1.00
CYP3A4*22 rs35599367	*1/*1	48	741.55	381.05	201.55	91.53	1.33	0.98	4.95	1.14	12.10	6.54	1.80	1.05
	*1/*22	1	987.23	0.00	204.39	0.00	1.50	0.00	6.34	0.00	9.27	0.00	1.01	0.00
CYP3A4*3 rs4986910	*1/*1	48	731.80	368.18	199.54	90.35	1.34	0.98	4.91	1.04	12.12	6.53	1.80	1.04
	*1/*3	1	1455.04	0.00	300.92	0.00	1.34	0.00	8.42	0.00	8.44	0.00	0.69	0.00
SLC22A1*2 rs72552763	*1/*1	27	746.47	397.47	208.56	92.05	1.32	1.06	4.99	1.31	11.96	6.29	1.80	1.10
	*1/*2	21	716.52	343.21	194.07	92.22	1.26	0.75	4.92	0.93	12.42	6.92	1.81	0.99
	*2/*2	1	1380.01	0.00	172.52	0.00	3.50	0.00	6.02	0.00	6.48	0.00	0.74	0.00
SLC22A1*5 rs34059508	*1/*1	48	749.37	382.18	202.45	91.34	1.33	0.98	4.98	1.16	12.05	6.56	1.78	1.05
	*1/*5	1	611.86	0.00	161.42	0.00	1.50	0.00	4.97	0.00	11.89	0.00	1.65	0.00
SLC28A3 rs7853758	GG	30	788.94	399.27	195.23	92.67	1.46	1.11	5.04	1.22	11.90	6.89	1.79	1.20
	GA	16	685.49	371.27	203.41	82.88	1.19	0.73	4.88	1.12	12.45	6.49	1.80	0.81
	AA	3	648.51	158.90	255.78	125.68	0.86	0.32	4.88	0.49	11.30	2.07	1.63	0.42
SLCO1B1 phenotype	PF	3	775.45	199.81	306.34	141.59	0.61	0.10	4.21	1.01	7.84	1.09	1.37	0.40
	DF	16	793.35	401.20	204.27	85.77	1.13	0.59	5.26	1.05	11.75	6.13	1.64	0.97
	NF	28	733.78	387.39	197.46	81.24	1.46	1.13	5.04	1.08	12.76	7.10	1.81	1.01
UGT1A4 rs2011425	T/T	35	732.18	416.66	193.40	94.93	1.44	1.07	4.98	1.20	12.93	7.39	1.92	1.17
	T/G	13	739.19	226.17	217.67	79.32	1.11	0.65	4.82	0.90	10.01	2.26	1.50	0.47
	G/G	1	1345.98	0.00	280.23	0.00	0.84	0.00	7.00	0.00	7.64	0.00	0.75	0.00
UGT2B15 rs1902023	TT	10	833.41	453.26	219.49	96.80	1.44	1.01	5.11	1.30	10.58	3.52	1.69	1.22
	TG	23	718.71	301.36	196.68	80.20	1.41	1.17	4.89	1.08	12.02	6.94	1.72	0.87
	GG	16	732.32	442.72	197.53	104.53	1.17	0.60	5.02	1.20	13.00	7.35	1.93	1.20

UM: ultrarapid metabolizer; RM: rapid metabolizer; NM: normal metabolizer; IM: intermediate metabolizer; PM: poor metabolizer; NF: normal function; DF: decreased function; PF: poor function.