

Abstract Submission No.: A-0635**Analysis of the Clinical Value of the ABCB1 and PAI-1 Gene Polymorphisms in Predicting Glucocorticoid-Induced Adverse Reactions in Nephrotic Syndrome Patients.**

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Objectives : Glucocorticoid (GC)-induced Adverse Reactions (ARs) have been extensively studied due to their potential impact on patients' health. Adding to the existing literature, this study aimed to establish the potential correlation between two polymorphisms [Adenosine Triphosphate-Binding Cassette B1 (ABCB1) C3435T and Plasminogen Activator Inhibitor-1 (PAI-1) 4G/5G] and various GC-induced ARs in Nephrotic Syndrome (NS) patients.

Methods : Herein, 513 NS patients who underwent GC treatment at the First Affiliated Hospital of Zhengzhou University were enrolled. Following that, ABCB1 C3435T and PAI-1 4G/5G genotyping was performed and compared across groups. Subsequently, multivariate analyses were performed on clinical data to determine the association between the ABCB1 C3435T and PAI-1 4G/5G polymorphisms and GC-induced ARs.

Results : We identified ABCB1 C3435T as an independent risk factor for the development of Steroid-Associated Avascular Necrosis of the Femoral Head (SANFH) (OR:2.191, 95%CI:1.258-3.813, $p=0.006$), but not as a risk factor for Steroid Diabetes (S-DM) occurrence. On the other hand, PAI-1 4G/5G was identified as an independent risk factor for the development of both SANFH (OR: 2.198, 95%CI: 1.267-3.812, $p=0.005$) and S-DM (OR: 2.080, 95%CI: 1.166-3.711, $p=0.013$). Notably, no significant correlation was found between the two gene polymorphisms and other GC-induced ARs.

Conclusions : Assessing ABCB1 C3435T and PAI-1 4G/5G before steroid treatment in NS patients could be useful in evaluating patients at a high risk of developing SANFH and S-DM.

Adverse reactions	Total (n=513)	ABCB1 C3435T			PAI-1 4G/5G		
		CC (n=143)	CT/TT (n=370)	P-value	4G/4G (n=138)	5G/4G+5G/5G (n=375)	P-value
SANFH (n %)	74 (14.42)	29 (20.28)	45 (12.16)	0.020	31 (22.46)	43 (11.47)	0.002
Steroid diabetes (n %)	78 (15.20)	29 (20.28)	49 (13.24)	0.043	29 (21.01)	49 (13.07)	0.026
Centripetal obesity (n %)	176 (34.31)	50 (34.97)	126 (34.05)	0.861	53 (38.41)	123 (32.80)	0.243
Central obesity (n %)	81 (15.79)	27 (18.88)	54 (14.59)	0.229	27 (19.57)	54 (14.40)	0.152
Digestive symptoms (n %)	38 (7.41)	12 (8.39)	26 (7.03)	0.597	14 (10.14)	24 (6.40)	0.151
Infection (n %)	80 (15.59)	19 (13.29)	61 (16.49)	0.370	22 (15.94)	58 (15.47)	0.895
Eye diseases (n %)	30 (5.85)	8 (5.59)	22 (5.95)	0.879	9 (6.52)	21 (5.60)	0.693

Adverse reactions	Total (n=361)	ABCB1 C3435T			PAI-1 4G/5G		
		CC (n=96)	CT/TT (n=265)	P-value	4G/4G(n=104)	5G/4G+5G/5G (n=257)	P-value
Steroid-related hypertension (n %)*	27 (7.48)	7 (7.29)	20 (7.55)	0.935	12 (11.54)	15 (5.84)	0.062

*152 patients were excluded due to a prior history of hypertension before GC usage.

Variables	SANFH				S-DM			
	Univariate analysis		Multivariate analysis		Univariate analysis		Multivariate analysis	
	OR (95%CI)	P-value	OR (95%CI)	P-value	OR (95%CI)	P-value	OR (95%CI)	P-value
Sex (Male)	0.729 (0.445,1.194)	0.209			1.267 (0.775,2.070)	0.346		
Age (Year)	0.986 (0.971,1.001)	0.064			1.021 (1.006,1.036)	0.005	1.025 (1.007,1.043)	0.006
BMI (kg/m ²)	0.946 (0.871, 1.028)	0.191			1.025 (0.950,1.104)	0.528		
Hypertension	1.059 (0.625,1.794)	0.832			1.706 (1.037,2.806)	0.036	1.740 (0.973,3.113)	0.062
FBG (mmol/L)	0.962 (0.826,1.120)	0.616			1.114 (1.014,1.224)	0.024	1.109 (1.011,1.216)	0.029
Hb (g/L)	0.990 (0.980,1.000)	0.047	0.991 (0.981,1.002)	0.113	1.012 (1.002,1.022)	0.020	1.016 (1.003,1.029)	0.017
Alb (g/L)	1.002 (0.974,1.030)	0.902			0.984 (0.956,1.012)	0.251		
TC (mmol/L)	0.947 (0.864,1.037)	0.237			1.077 (0.997,1.165)	0.060		
TG (mmol/L)	1.103 (0.888,1.157)	0.845			1.041 (0.923,1.175)	0.509		
HDL (mmol/L)	0.711 (0.418,1.208)	0.207			0.958 (0.591,1.554)	0.862		
LDL (mmol/L)	0.942 (0.848,1.045)	0.259			1.105 (1.013,1.205)	0.025	1.089 (0.981,1.208)	0.108
Scr (μmol/L)	1.000 (0.998,1.002)	0.887			1.000 (0.998,1.002)	0.972		
24h-UTP (g/d)	0.996 (0.963,1.030)	0.804			1.002 (0.973,1.031)	0.894		
ABCB1/CC genotype	1.826 (1.093,3.051)	0.021	2.191 (1.258,3.813)	0.006	1.666 (1.004,2.765)	0.048	1.551 (0.881,2.730)	0.128
PAI-1/4G4G genotype	2.223 (1.334,3.705)	0.002	2.198 (1.267,3.812)	0.005	1.770 (1.065,2.941)	0.028	2.080 (1.166,3.711)	0.013
AP/AC	0.950 (0.575,1.570)	0.841			1.818 (1.116-2.961)	0.016	1.580 (0.907-2.752)	0.106
Glucocorticoid pulse	1.224 (0.911,1.645)	0.180			0.317 (0.075-1.350)	0.120		
Cumulative glucocorticoid dose (g)	1.085 (1.054,1.117)	<0.001	1.092 (1.059,1.126)	<0.001	0.993 (0.965-1.023)	0.655		