Effects of \textit{ABCB1} 3435C>T genotype on serum levels of cortisol and aldosterone in women with normal menstrual cycles

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\textbf{ABSTRACT.} ABCB1, also known as MDR1/P-glycoprotein, can transport cortisol and aldosterone. We examined the effects of \textit{ABCB1} polymorphisms on serum levels of cortisol and aldosterone among different phases of the normal menstrual cycle in 51 non-pregnant healthy Japanese female volunteers (22 ± 1 years old). The menstrual cycle was divided into three phases: premenstrual phase (14 days preceding the onset of menstruation, N = 22; menstrual phase, N = 11, and postmenstrual phase, N = 18). \textit{ABCB1} -129T>C, 1236C>T, 2677G>A/T, and 3435C>T genotypes were determined. Serum levels of cortisol, aldosterone, estradiol, progesterone, and testosterone were measured. The serum levels of estradiol in the pre- and post-
menstrual phases and of progesterone in the premenstrual phase were significantly increased when compared to their serum levels in the menstrual phase (P < 0.005). In the postmenstrual phase, the mean serum cortisol level in subjects with the 3435CT and 3435TT genotype was 7.6 ± 3.4 µg/dL (mean ± SD, N = 7), which was significantly lower than in women with the 3435CC genotype (9.9 ± 1.8 µg/dL, N = 11) (P = 0.037). The opposite effect was observed in the serum aldosterone level during the postmenstrual phase (97.2 ± 23.4 and 141.2 ± 48.5 pg/mL for 3435CC and 3435CT + 3435TT, respectively; P = 0.041). These findings suggest that ABCB1 3435C>T genotype can influence serum levels of cortisol and aldosterone during the postmenstrual phase of the normal menstrual cycle.

**Key words:** MDR1; P-glycoprotein; Genetic polymorphism; Cortisol; Aldosterone; Menstrual cycle