

Association of Estrogen Receptor Beta gene Polymorphism with Menopausal Symptoms

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Background: The nature and severity of menopausal symptoms are highly variable among women. On the other hand, polymorphisms of the ER β gene, such as cytosine-adenine (CA) dinucleotide repeats in intron 5, have been implicated in several diseases.

Objective : We investigated the possible role of cytosine-adenine (CA) dinucleotide repeat polymorphism of the estrogen receptor beta (ER β) gene in the occurrence of menopausal symptoms.

Materials and Methods: Fifty-one postmenopausal Japanese women were interviewed about menopausal symptoms. Menopausal symptoms were divided into vasomotor, psychological and musculoskeletal symptoms. CA repeat polymorphism of the ER β gene were examined using the WAVE DNA Fragment Analysis System.

Results: The number of CA repeats of the ER β gene ranged from 14 to 25, and subjects could be divided into 3 groups: those with \leq 17 repeats (E); 18 to 21 repeats (S); and \geq 22 repeats (L). Four genotypes of CA repeats (EL, SS, SL, and LL) were found among the subjects, with SL being the most common. Relative to subjects with the SL genotype, women with SS had increased risk of vasomotor symptoms (odds ratio [OR] = 7.0; 95% CI, 1.25-39.15; P < 0.05), psychological symptoms (OR = 13.0; 95% CI, 1.44-117.2; P < 0.01), and vasomotor symptoms (OR = 7.6; 95% CI, 1.61-35.9; P = 0.01). The EL genotype was associated with an increased risk of vasomotor symptoms (P < 0.05) and depression (P < 0.01).

Conclusion: CA repeat polymorphism of the ER β gene may be associated with menopausal symptoms.