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TITLE

THE EXPRESSION OF TRANSIENT RECEPTOR POTENTIAL VANILLOID 6 IN HEALTHY AND PREECLAMPTIC HUMAN PLACENTA

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ABSTRACT

Context: Preeclampsia is a pregnancy-specific disease characterized by hypertension, proteinuria, and oxidative stress in the placenta. During the last trimester of gestation, calcium Ca2+ transport from mother to fetus increases dramatically in response to increased demand for Ca2+ caused by bone mineralization in the fetus. Several recent studies have reported that that Ca2+ supplementation can significantly reduce the incidence and severity of preeclampsia or delay its onset. However, other groups have found that Ca2+ supplementation did not alleviate the severity of preeclampsia.

Objective: To identify the cause of these varying consequences of Ca2+ supplementation, we analyzed the position, sequence and frequencies of TRPV6 variants in preeclampsia patient.

Methods: we analyzed the position, sequence and frequencies of TRPV6 variants in preeclampsia patient and examined gene expression of primary culutre trophoblast from preeclampsia patients with the mutated TRPV6.

Results: 20% of these patients were found to have a TRPV6 point mutated gene sequence that resulted in a methionine to valine conversion. Moreover, primary cultured trophoblast from preeclampsia patients with the mutated TRPV6 showed decreased carbamylcholine induced Ca2+ influx compared to the control group. It is possible that the mutated TRPV6 could induce various calcium supplementation effects due to insufficient transport of Ca2+ into components of the placenta such as decidua.

Conclusion: In summary, TRPV6 mutation could be a marker for obstinate preeclampsia; therefore, identifying pregnant women with TRPV6 mutation could enable them to take efforts to prevent preelcampsia

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