Meta-Analysis Approach to the Estrogen Receptor-Alpha Gene PvuII (T/C) Polymorphism and Preeclampsia Risk

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Abstract: Several studies have been reported the association between estrogen receptor α (ESR1) gene polymorphisms and various pathological conditions, including pre-eclampsia. The present meta-analysis was done to elucidate the association of PvuII (T/C) polymorphism with pre-eclampsia among pregnant women. A literature search was conducted in electronic databases including PubMed, Scopus, Elsevier, Springer and Google Scholar to find eligible studies. The pooled odds ratios (ORs) with 95% confidence intervals were calculated under dominant, recessive, co-dominant, and allelic models. This meta-analysis included 4 eligible studies consisting 612 cases and 619 controls. The ORs for the PvuII (T/C) polymorphism and pre-eclampsia were not indicative of any association under several genetic models including dominant model (CC+CT vs. TT: OR = 1.106 [95%CI: 0.851–1.436]; p = 0.452), recessive model (CC vs. CT+TT: OR =1.028 [95%CI: 0.793–1.334]; p = 0.833), co-dominant model (CC vs. TT: OR = 1.094 [95%CI: 0.791–1.513]; p = 0.014), and allelic model (C vs. T: OR = 1.051 [95%CI: 0.897–1.233]; p = 0.538). In summary, PvuII (T/C) polymorphism has not significant association with the risk of pre-eclampsia among pregnant women. It could be of value to investigate its association with pre-eclampsia in combination with additional risk factors. However, very large studies with different ethnic population are required to accurately demonstrate the role of this candidate gene in development of pre-eclampsia.

Keywords: Pre-eclampsia; Estrogen Receptor-Alpha; PvuII (T/C); Meta-analysis

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