2009

GSTM1, GSTT1 and CYP1A1 polymorphisms and risk of oral cancer: A case-control study in Jakarta, Indonesia

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Available at: https://works.bepress.com/rosnah_zain/62/
Abstract

Purpose: to investigate genetic polymorphisms in GSTM1, GSTT1 and CYP1A1 and the association with the risk of oral cancer in the Jakarta population. Method: A total of 81 cases and 162 controls matched for age and sex were selected from 5 hospitals in Jakarta. Sociodemographic data using questionnaires were obtained and peripheral blood samples were collected with informed consent for PCR-RFLP assay. Conditional logistic regression analysis was performed to obtain the association between the risk of oral cancer and GSTM1, GSTT1 and CYP1A1 polymorphisms. Results: GSTM1 and GSTT1 null were slightly overrepresented among cases (60.5% and 45.7% respectively) compared to controls (55.6% and 41.4% respectively), but no statistically significant differences were observed. In contrast, the distribution of CYP1A1 polymorphism was higher among controls compared to cases (52.5 % versus 42.4 %). The odds ratio of null GSTM1 and GSTT1 genotypes was slightly higher compared to wild type genotypes (OR 1.19, 95% CI 0.70-2.02 and OR 1.19, 95% CI 0.72-2.05 respectively). Furthermore, the presence of CYP1A1 polymorphism did not increase the risk of oral cancer (OR 0.70, 95% 0.39-1.25). Conclusion: Genetic polymorphisms of GSTM1, GSTT1 and CYP1A1 may not be risk factors for oral cancer in the Jakarta population.

Keyword

Indonesia, Jakarta, Metabolizing enzyme polymorphisms, Oral cancer risk

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