

Ethnicity and Dietary Practices as Colorectal Cancer Risk Predictors: A Retrospective Case-control Study in Sabah, Malaysia

ABSTRACT

Introduction: The association between colorectal cancer (CRC), ethnicity, and dietary practices have been well studied. However, limited studies have been conducted to assess dietary practices and ethnicity in Sabah on risk of CRC. This study aimed to assess the risk and protective factors in dietary practices and the inclusion of ethnicity and dietary practices as risk predictors for CRC. Methods: 148 CRC patients, 609 controls were recruited in this case-control study. Logistic regression analyses were performed to determine significant predictors of CRC. Prediction model was computed using Logistic Regression (LR) and C5 Decision Tree algorithms and compared. Results: Age 60-69 (aOR = 7.44, 95% CI = 3.69-15.00); male (aOR = 4.49, 95% CI = 2.67-7.54), Chinese (aOR = 32.32, 95% CI = 7.20-145.13); moderate physical activity (aOR = 3.67, 95% CI = 2.03-6.63), pickled mango (aOR = 5.66, 95% CI = 1.62-19.81), pork (aOR = 2.29, 95% CI = 1.09-4.79) increased the odds of developing CRC. No comorbidities (aOR = 0.53, 95% CI = 0.31-0.91), tertiary education attainment (aOR = 0.18, 95% CI = 0.07-0.43) were protective against CRC. Hosmer-Lemeshow test indicated good fit of the model ($p = .946$) and excellent discriminatory power (AUC=0.877). LR prediction model demonstrated better overall accuracy (89.2%), discriminatory power (AUC=0.82), sensitivity (77%), and specificity (91%) than the C5 Model. Conclusion: Frequent consumption of pickled mangoes and pork increased CRC risk among the Sabah population. Inclusion of ethnicity and dietary practices as predictors could potentially improve risk stratification of the Sabah population for early CRC screening