

MATERNAL CONSUMPTION OF COFFEE AND TEA DURING PREGNANCY AND RISK OF CHILDHOOD ALL: RESULTS FROM AN AUSTRALIAN CASE-CONTROL STUDY

Elizabeth Milne, *Telethon Institute for Child Health Research, Centre for Child Health Research, The University of Western Australia, Perth, Western Australia*

Jill Royle, *Telethon Institute for Child Health Research, Centre for Child Health Research, The University of Western Australia, Perth, Western Australia*

Lisa Bennett, *Telethon Institute for Child Health Research, Centre for Child Health Research, The University of Western Australia, Perth, Western Australia*

Nicholas de Klerk, *Telethon Institute for Child Health Research, Centre for Child Health Research, The University of Western Australia, Perth, Western Australia*

Helen Bailey, *Telethon Institute for Child Health Research, Centre for Child Health Research, The University of Western Australia, Perth, Western Australia*

Carol Bower, *Telethon Institute for Child Health Research, Centre for Child Health Research, The University of Western Australia, Perth, Western Australia*

Margaret Miller, *Nutrition and Dietetics Program, School of Exercise, Biomedical and Health Sciences, Edith Cowan University, Joondalup WA*

John Attia, *Centre for Clinical Epidemiology and Biostatistics, University of Newcastle, Newcastle, NSW and Dept of Medicine, John Hunter Hospital and Hunter Medical Research Institute, Lookout Road, New Lambton, NSW.*

Rodney Scott, *Hunter Medical Research Institute, The School of Biomedical Sciences, Faculty of Health, University of Newcastle and the Hunter Area Pathology Service, HNEHealth, Newcastle, NSW, Australia*

Bruce Armstrong, *Sydney School of Public Health, The University of Sydney, New South Wales, Australia*

Background: Little is known about the origins of childhood acute lymphoblastic leukaemia (ALL). Several studies have reported an increased risk of childhood acute leukaemia with higher levels of maternal coffee consumption during pregnancy, while others have reported no association. One positive study also examined maternal tea consumption and found no effect. Both coffee and tea contain naturally occurring topoisomerase II inhibitors, which have been associated with chromosomal damage of the type seen in infant leukaemia. The aim of this study was to investigate whether maternal coffee and/or tea consumption during the last six months of pregnancy was associated with risk of childhood ALL.

Methods: Data on coffee and tea drinking during pregnancy from 337 case mothers and 697 control mothers were analyzed using unconditional multivariable logistic regression. A meta-analysis of our findings with those of previous studies was also conducted.

Results: There was little evidence of an overall association between maternal coffee consumption and risk of ALL: OR 0.89 (95% CI 0.61, 1.30), although there was some suggestion that higher levels of intake might increase risk in children of non-smoking mothers: OR for 2+ cups/day = 1.44 (95% CI 0.85, 2.42); this was supported by our meta-analysis. Risk was also elevated among cases with chromosomal translocations. The overall OR for maternal tea consumption was 0.82 (95% CI 0.56, 1.18), although the OR for T-cell ALL was 0.21 (95% CI 0.08, 0.51). Among ALL cases with translocations, the ORs for tea consumption tended to be elevated: OR=1.70 (95% CI 0.79-3.68) for 2+ cups/day.

Conclusions: The observed increased risk associated with coffee and tea consumption may be confined to ALL with translocations. These associations should be explored further in large international consortia.