

## NSA Concurrent Oral Session 6: Miscellaneous

### Dietary supplement use in people being treated for depression

KM Silvers<sup>1</sup>, CC Woolley<sup>2</sup>, D Hedderley<sup>1</sup>

<sup>1</sup>New Zealand Institute for Crop & Food Research, Private Bag 11600, Palmerston North; <sup>2</sup>School of Psychology, Massey University, Private Bag 11222, Palmerston North, New Zealand

**Background** - Dietary supplement use has increased over the last 10 years, but information about characteristics associated with their use and possible interactions with prescription drugs is lacking.<sup>1,2</sup> Up to 50 % of adults have been reported to take dietary supplements, and while the taking of supplements has been found to be related to some physical morbidities<sup>2</sup>, there is no information about supplement use in people being treated for depression.

**Objective** - To determine dietary supplement use in people being treated for depression.

**Design** - Participants were recruited for a clinical trial to determine the effect of fish oil on mood in the treatment of depression. Exclusion criteria included any co-existing psychiatric disorder (except anxiety disorders), blood clotting disorders, unstable medical conditions, and those already taking fish oil supplements. Demographic information, details about the participants' depression and current therapies, use of dietary and herbal supplements in the previous 12 months, and physical activity were collected at baseline. Characteristics of supplement users were compared to non-users using either chi-squared tests or Mann-Whitney U-tests.

**Outcomes** - Forty-five of 72 participants (63%) who provided dietary supplement information had taken at least one dietary supplement within the previous 12 months. On average, supplement users were found to have taken  $2.8 \pm 1.6$  dietary supplements during the assessment period. Women were more likely to be taking supplements than men ( $P < 0.001$ ).

**Conclusion** - Dietary supplements are used frequently in people being treated for depression. This has important implications for treatment as little is known about supplement-drug interactions.

<sup>1</sup>Palmer M, Haller C, McKinney P et al. (2003): Adverse events associated with dietary supplements: an observational study. *Lancet* 2003; 361, 101-106.

<sup>2</sup>Harrison RA, Holt D, Pattison DJ, Elton PJ. Are those in need of taking dietary supplements? A survey of 21923 adults. *British Journal of Nutrition* 2004; 91; 617-23

### Alcohol, genome instability and breast cancer

B Benassi; M Fenech

CSIRO Health Science and Nutrition, Adelaide, South Australia, Australia

**Background** - Alcohol abuse is associated with an increase in risk for a variety of cancers.<sup>1,2</sup> The specific association between alcohol consumption and increased risk of breast cancer has been a consistent finding in numerous studies to date however the biological mechanism remains unknown.<sup>3</sup>

**Objective** - One possibility is that alcohol induces genome instability including specific pathological events commonly seen in breast cancer, such as chromosome 17 aneuploidy and/or HER2-neu gene amplification.

**Design** - The cytokinesis block micronucleus (CBMN) assay was used to assess the ability of alcohol to induce genome damage in two cell lines; one containing a mutation of the BRCA1 gene, treated chronically with alcohol for a period of 6 weeks. It was demonstrated that in these cell lines, chronic treatment with physiological concentrations of alcohol (0.36%, 1.36%) induces micronuclei, nucleoplasmic bridges and nuclear buds, indicative of the various genome damaging events of chromosome loss and breakage, chromosome rearrangement and gene amplification respectively.

**Outcomes** - Using the technique of chromogenic in situ hybridisation (CISH), it was possible to assess the occurrence of the specific genome instability event of chromosome 17 aneuploidy in these cell lines. Results from this assay indicate chronic treatment of alcohol induces chromosome 17 aneuploidy in both cell lines.

**Conclusion** - The results from this study support the hypothesis that alcohol induces genotoxic events that are relevant to cancer risk including breast cancer risk.

1. Brooks P. DNA damage, DNA repair, and alcohol toxicity – A review. *Alcoholism: Clinical and Experimental Research* 1997; 21:1073-1082.
2. Maffei F, Fimognari C, Castelli E, Stefanini G, Forti G, Hrelia P. Increased cytogenetic damage detected by FISH analysis on micronuclei in peripheral lymphocytes from alcoholics. *Mutagenesis* 2000; 15:517-523.
3. Longnecker M. Alcoholic beverage consumption in relation to risk of breast cancer: meta-analysis and review. *Cancer Causes and Control* 1994; 5:73-82.