Concurrent Session 5

**Folate, vitamin B12, plasma thiols and cognitive function in an elderly population sample**

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**Background** - The plasma thiols, especially homocysteine (HCY), folate and vitamin B12 (VitB12) have been implicated in the aetiology of cognitive impairment, anxiety and depression in the elderly.

**Objective** - The aim of the study was to determine whether there was a relationship between plasma thiols, folate and VitB12 and the prevalence of cognitive impairment, anxiety and depression in a sample of 120 elderly subjects (67 females and 53 males), 65 years old and over, living in a NSW Central Coast retirement village.

**Design** - Cognitive impairment was assessed using the Mini-Mental State Examination (MMSE) test and anxiety and depression using the Hospital Anxiety and Depression Scale (HADS). The plasma thiols HCY, cysteine (CYS), cysteinyl-glycine (CYS-GLY) and glutathione (GSH) were measured by high pressure liquid chromatography (HPLC). Serum folate and VitB12 and red cell folate were measured using automated specific binding assays.

**Outcomes** - The severity of anxiety (Pearson’s \(r = -0.290, P=0.035\)) and depression (Pearson’s \(r = -0.365, P=0.007\)) was inversely related to the concentration of plasma CYS-GLY in males but not in females. In contrast, anxiety was inversely related to the concentration of serum VitB12 in females (Spearman’s \(r_s = -0.269, P=0.028\)) but not in males. There was no relationship between the other thiols (including HCY) and folate with anxiety and depression (\(P>0.05\)). Cognitive impairment was not related to any of the thiols or vitamins probably because cognitive impairment (MMSE score ≤ 24) was very low in this cohort (3 of the 120 subjects).

**Conclusions** - The observed HCY-independent association of CYS-GLY and VitB12 with anxiety and depression in this cohort is a novel finding which may help shed some light on the development of these disorders in the elderly.