Concurrent Session 4: Cardiovascular Disease

**Blood pressure response to dietary modifications is related to use of anti-hypertensive therapy**

**CE Huggins, CA Nowson, A Worsley, C Margerison, MK Jorna**

*School of Exercise and Nutrition Sciences, Deakin University, Burwood, VIC, 3215*

**Background** – We have previously reported that a DASH-type diet (OD; high in fruits, vegetables and low-fat dairy foods) and a low sodium, high potassium diet (LNAHK) lowers blood pressure (BP), with a greater BP reduction achieved after consuming the LNAHK compared with the OD. Whether anti-hypertensive medications affects the BP response to either the OD or the LNAHK diets is not known.

**Objective** – To determine: 1) if the OD and LNAHK diets can enhance the BP-lowering effects of antihypertensive medications; and 2) whether there is a selective effect of diet on BP with different types of antihypertensive medication (renin-angiotensin system blockade, ACE/AT1; or other therapies, OAH).

**Design** – Ninety-four subjects, which included 24 men and 18 women taking antihypertensive therapy, completed a 12 week study where, following a two-week control diet (CD), all subjects followed two dietary regimes in random order: the OD, plus either a LNAHK or high dairy diet with a second two-week CD period between diets. Seated home BP was measured daily for the last two weeks in each phase.

**Outcomes** – Compared with CD (mean difference ± SEM), the OD selectively enhanced systolic BP reduction in subjects receiving ACE/AT1 (-4.2 ± 0.2 mmHg, n=15, P<0.01) but not in those on OAH (+0.6 ± 1.2 mmHg, n=27). There was a greater fall in BP in those consuming the LNAHK and taking ACE/AT1 (systolic/diastolic -9.5 ± 2.4/-4.1 ± 1.3 mmHg, n=7, P<0.01 and P<0.05 respectively), compared to CD. LNAHK with OAH significantly lowered systolic BP (-4.4 ± 1.4 mmHg, n=13, P<0.01) but not diastolic (-2.5 ± 1.3 mmHg, P>0.05), compared to CD. The high dairy diet had no effect on BP.

**Conclusion** – Implementation of a LNAHK diet can be a useful adjunct treatment, to assist in reducing BP, particularly in those taking ACE/AT1 antihypertensive medication.