C-CP-3

Changes in Blood Pressure after 6 Years in the Hong Kong Cardiovascular Risk Factor Prevalence Survey Cohort

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Introduction: In 1995-6, 2881 randomly chosen Hong Kong men and women participated in the Hong Kong Cardiovascular Risk Factor Prevalence Survey. We have begun to recall these subjects for follow up. Here, we report the changes in blood pressure in the subjects that have been restudied.

Method: Subjects were studied in the morning after overnight fasting. Height, weight, waist and hip circumferences were measured. Blood pressure was measured carefully after resting. Venous blood was taken for analysis of lipids. An oral glucose tolerance test was performed.

Results: 31 subjects (13 M, 18 F; age 54 ± 14 yrs) who have completed the follow up study are included in this analysis. The blood pressure was 113.6 ± 3.2/70.7 ± 1.6 mmHg in 1995-6 and 118.3 ± 3.1/75.2 ± 1.5 mmHg in 2001. The systolic and diastolic blood pressure increased by 4.7 and 4.5 mmHg respectively ($p<0.05$). There was no change in body weight and body mass index (BMI), but the waist circumference increased from 78.2 ± 1.6 to 81.0 ± 1.7 cm ($p=0.004$). There were no significant changes in the lipid profile.

Conclusions: The increase in blood pressure with age observed in cross-sectional studies is borne out in this longitudinal study. The rise in blood pressure is accompanied by an increase in the waist circumference.

C-CP-4

Bioavailability of Oral Arsenic Trioxide for the Treatment of Acute Myeloid Leukemia

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Introduction: Arsenic trioxide (As_2O_3) is increasingly used in the treatment of haematological malignancies. Typically this involves daily intravenous (IV) administration for 4 to 8 weeks, with all its attendant problems (inconvenience, risks and expense of maintaining suitable vascular access and hospitalization). To overcome these drawbacks we developed an oral formulation (Fowlers solution) and set out to evaluate its systemic bioavailability.

Method: With the approval of our institutional Ethics Committee, 9 patients with refractory/relapsed acute myeloid leukaemia (AML) who gave their informed consent were recruited to this investigation. Each patient received 10 mg of a commercial IV As_2O_3 formulation infused over 1 hour starting at 10 a.m. on day 1 and swallowed 10 mg of As_2O_3 (10 ml of our oral solution, freshly prepared for each course) at 10 a.m. on day 2. Daily oral dosing was continued thereafter. Just prior to and up to 48 hours after starting the IV dose, timed venous blood samples (11 ml) were drawn and corresponding plasma and whole blood arsenic (As) concentrations determined by atomic absorption spectroscopy. Systemic bioavailability was inferred from the area under the drug level vs time curve (AUC), using the trapezoid rule. The AUC after IV dosing was determined on day 1 and assumed to represent 100% bioavailability. The AUC attributable to oral dosing on day 2 was also estimated.

Results: The mean (± SEM) 24 hour AUCs in plasma after IV dosing (day 1) and those attributed to oral dosing (on day 2) expressed as nanomolar hours were: 2673 (± 362) and 2640 (± 342) respectively. Corresponding values for blood were 3702 (± 483) and 3207 (± 623). Our oral solution therefore appeared to attain an average bioavailability of about 99 and 87% based on plasma and blood As levels respectively. No patient suffered unexpected complications and 5 went into remission.

Conclusions: Oral As_2O_3 is an efficacious alternative to IV As_2O_3, and may be more convenient and cost-effective.