

overweight over the normal weight individual. In conclusion, this study suggests that, platelet aggregation in diabetic patients is associated with the increase metabolic imbalance in the diabetic patients.

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ERYTHROCYTE Na^+ , K^+ -ATPASE ACTIVITIES IN SICKLE CELL DISEASE AND TRAITS

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Abnormalities of cation transport have been described in association with sickling, but the role of Na^+ , K^+ -pump, and associated changes in red cell water content have not been firmly established. Isolated erythrocyte membranes were prepared from human blood samples of different genotypes. The assay of the enzyme activities for Na^+ , K^+ -ATPase of the membranes were carried out, and this monitored the inorganic phosphate released from ATP. The protein concentration of the membrane preparations were carried out using bovine serum albumin as the standard protein and the enzyme activity was expressed as $\mu\text{mole Pi/mg Hgb/hr}$. Na^+ , K^+ -ATPase activities were investigated in the membrane preparations from human erythrocytes of 31 Sickle cell disease patients (HbSS), 30 Sickle cell traits (HbAS) and 35 HbAA genotype. The result indicated that Na^+ , K^+ -ATPase activities reduce with the severity of the haemoglobin abnormality. The trend for the different genotype was $\text{HbAA} > \text{HbAS} > \text{HbSS}$. The reduction in HbSS activity was significant ($p < 0.05$) compared with the activities obtained in HbAA. The findings in this study indicate a magnified role for sodium-potassium pump in the physiological manifestation of sickle cell disease, and therefore suggest that its modulation might prove useful in therapy.

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CARDIOVASCULAR RESPONSES TO CUTANEOUS COLD STRESS ACROSS THE MENSTRUAL CYCLE: EFFECT OF VITAMIN C INGESTION

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The impact of cold stress in the development of hypertension remains an area of research interest. It has been reported that the prevalence of hypertension and related cardiovascular disease is higher among people who live in colder regions. Cold pressor test (CPT) is

employed to evoke sympathetic-mediated cardiovascular responses, and has been shown to predict the development of hypertension. Because ovarian hormones affect numerous physiological variables that may alter sympathetic-mediated cardiovascular responses, the aim of the study is to determine the effect of oral vitamin C on cardiovascular responses to CPT across the menstrual cycle phases in young women. Changes in systolic blood pressure (SBP), diastolic blood pressure (DBP), mean arterial pressure (MAP) and heart rate (HR) induced by CPT were determined in fifteen healthy young women with regular menstrual cycle with or without vitamin C pretreatment. CPT was performed by immersing left hand in water at 40C for 2 min. Results showed that CPT without vitamin C pretreatment induced significant increases in SBP, DBP, MAP and HR during the luteal phase but only in SBP in the menstrual and follicular phases. Pretreatment with vitamin C abrogated CPT-induced tachycardiac response during the luteal phase while the pressor response across the menstrual cycle was not affected by vitamin C pretreatment. These data suggest that vitamin C ingestion may impact cardioprotective effect particularly during the luteal phase of the menstrual cycle. In addition, ingestion of vitamin C may not affect sympathetic-mediated pressor response in young women.

EFFECT OF EPITHELIAL SODIUM CHANNEL BLOCKADE ON VASCULAR REACTIVITY IN NORMOTENSIVE AND HYPERTENSIVE NIGERIANS

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Hyper-reactivity to the cold pressor test (CPT) is considered to be a useful indicator of future hypertension in normotensive individuals¹. Thirty-nine normotensive (NT) and fifty-one hypertensive (HT) subjects were exposed to the CPT by foot immersion in cold slurry at 4°C for 1 minute² after control parameters had been recorded. Vascular reactivity (ΔSBP or $\Delta\text{DBP} \geq 15\text{mmHg}$)¹ was determined before and after salt-loading (200mmol/day of Na^+ for 5 days). The tests were repeated (200mmol/day of Na^+ plus amiloride 5mg daily for 5 days) after one week wash-out period. Vascular reactivity was lower in NT (43.6% systolic, 38.5% diastolic) compared with HT (49% systolic, 41.2% diastolic) at baseline. Following salt-loading, systolic reactivity increased (64%) in NT but fell marginally in HT (47%) while diastolic reactivity fell to 36% and 33% respectively, in NT and HT. Systolic and diastolic reactivity reduced in NT to 50% and 32% respectively with amiloride but increased to 68% and 58% respectively in HT. Since vascular hyper-reactivity usually precedes sustained hypertension, it is possible that enhanced vascular reactivity plays an important role in the aetiology of hypertension among Nigerians. Enhanced