

EDTA plasma clearance using slope intercept method. The patients' height and weight is used to correct the GFR to body surface area. Correlations of the values are tested by Pearson and intra-class correlation, and mean and standard deviation derived from paired t-test.

**Results:** All time point combinations using two blood sampling shows a high correlation with multiple blood sampling method (p value < 0.001, r = 0.909 to 0.989). The best combination using two blood sampling is at 2 and 4 hour time point (r = 0.989 with 99% consistency). There is no significant difference in the GFR obtained by two blood sampling and multiple blood sampling between gender and ethnicity.

**Conclusion:** <sup>51</sup>Cr-EDTA GFR estimation using two blood sampling method is accurate and reliable. The two and four hour time point is found to be the best. Gender and ethnicity does not influence GFR estimation using two blood sampling method.

## **A STUDY OF THE ARTERIAL VARIATIONS IN THE POPLITEAL REGIONS, ARE THEY SYMMETRICAL OR NOT?**

*Ahmad Ruzain Bin Salehuddin<sup>1</sup>, Zunariah Binti Buyong<sup>2</sup>, Siti Kamariah Binti Che Mohamed<sup>3</sup> and Radhiana Binti Hassan<sup>3</sup>*

<sup>1</sup>Anatomy Unit, Basic Medical Sciences Cluster, Faculty Of Medicine, University Teknologi Mara (Uitm) Sungai Buloh Campus, Jalan Hospital, 47000 Sungai Buloh, Selangor, Malaysia. <sup>2</sup>Department of Basic Medical Sciences, Kulliyah (Faculty) of Medicine, International Islamic University Malaysia, 25200 Kuantan, Pahang, Malaysia. <sup>3</sup>Department of Radiology, Kulliyah (Faculty) of Medicine, International Islamic University Malaysia, 25200 Kuantan, Pahang, Malaysia

**Objective:** To assess the prevalence of the arterial variations in the popliteal regions and the symmetrical characteristic of the popliteal artery branching patterns in both knees of all subjects.

**Methodology:** 77 subjects (154 knees) were prospectively studied using colour Doppler ultrasonography in this descriptive and cross-sectional study. No subject had anomalies of the lower limbs or history of previous lower limb surgery. Subjects with cardiovascular disease were excluded from this study.

**Results:** Prevalence of the popliteal artery variations was 4.5%. The two variants (type I-B and type II-A) were seen in both knees. There were 5 subjects who had at least one variant in either side of their knees. Two subjects had type II-A occurred bilaterally in both knees while 3 other subjects had unilateral pattern of type I-B in combination with type I-A in their knees.

**Conclusion:** Symmetrical and non-symmetrical pattern can be seen in the population depending on the popliteal artery branching pattern.

### *Review*

## **REVISITING ESSENTIAL HYPERTENSION, REGULATION OF BLOOD PRESSURE CONTROL AND THE ADRENALINE HYPOTHESIS**

*Aszrin Abdullah<sup>1</sup>, Azarisman Shah Mohd Shah<sup>2</sup>, Noriah Mohd Nor<sup>3</sup> and Tariq Abdul Razak<sup>3</sup>*

<sup>1</sup>Department of Basic Medical Sciences, Kulliyah of Medicine. <sup>2</sup> Department of Internal Medicine, Kulliyah of Medicine. <sup>3</sup>Department of Basic Medical Sciences, Kulliyah of Pharmacy

Hypertension or high blood pressure, is a condition that has a significant impact on the world's population morbidity and mortality. The World Health Report 2002, stated that high blood pressure caused 7.1 million deaths throughout the world, which was approximately 13% of total deaths worldwide. The body's arterial blood pressure control depends on short-term and long-term mechanisms. Short-term BP regulation is mediated by the autonomic nervous system (ANS) targeting the heart, vessels, and adrenal medulla. The sympathetic nervous systems (SNS) crucial involvement in stressful conditions and short term regulation of blood pressure is also widely accepted. There has also been increasing

evidence and recognition of sympathetic augmentation as the main cause for essential hypertension in a significant number of patients especially those with no known attributable secondary causes and those who are young. We discuss the role of the 'adrenaline hypothesis' in the pathophysiology of hypertension.

## PHENYLETHANOLAMINE-N-METHYLTRANSFERASE INHIBITION FOR SUSTAINED BLOOD PRESSURE REDUCTION IN RATS

Aszrin Abdullah<sup>1</sup>, Noriah Mohd Nor<sup>2</sup> and Tariq Abdul Razak<sup>2</sup>

<sup>1</sup>Department of Basic Medical Sciences, Kulliyah of Medicine. <sup>2</sup> Department of Basic Medical Sciences, Kulliyah of Pharmacy

**Introduction:** Hypertension is having an increasing impact on the world population's morbidity and mortality. The pathogenesis of hypertension is multifactorial but the 'adrenaline hypothesis' is being increasingly identified as a cause for hypertension in the young.

**Objective:** The aim of this study is to assess the extent and sustainability of blood pressure fall following peripheral blockade of adrenaline synthesis and to assess the use of THIQ and its ability to block peripheral adrenaline synthesis.

**Methodology:** Inbred strain of spontaneously hypertensive rats (SHRs) of Wistar-Kyoto Japanese strain rats were obtained and randomised into treated and control groups. Indirect systolic blood pressure (SBP) was measured under ether anaesthesia. 1,2,3,4-Tetrahydroisoquinoline administered chronically. Blood collected for plasma catecholamine measurement and BP/HR measured at regular intervals.

**Results:** Baseline SBP, HR and body weight comparable between treated and control groups (p=1.00, p=0.20 and p=0.22, respectively). Significant SBP drop seen post PNMTI administration (p=0.02). SBP also showed significant drop in week 1 (p=0.03) and week 2 post treatment (p=0.04). Treated SHR plasma catecholamine and dopamine levels also dropped 2-weeks following the PNMTI administration (p= 0.04).

**Conclusion:** This study is consistent with adrenaline hypothesis in the pathogenesis of essential hypertension in young spontaneously hypertensive rats. Consequently, we have also shown that chronic adrenal medullary inhibition with 1,2,3,4-Tetrahydroisoquinoline will result in sustained BP reduction.

## PREHYPERTENSIVE STATE, METABOLIC SYNDROME AND CARDIOVASCULAR RISK FACTORS AMONG YOUNG ADULTS IN RURAL MALAYSIA

Aszrin Abdullah<sup>1</sup>, Azarisman Shah Mohd Shah<sup>2</sup>, Jamalludin Ab Rahman<sup>3</sup>, Noriah Mohd Nor<sup>4</sup> and Tariq Abdul Razak<sup>4</sup>

<sup>1</sup>Department of Basic Medical Sciences, Kulliyah of Medicine. <sup>2</sup> Department of Internal Medicine, Kulliyah of Medicine.

<sup>3</sup>Department of Community Medicine, Kulliyah of Medicine. <sup>4</sup>Department of Basic Medical Sciences, Kulliyah of Pharmacy

**Introduction:** Hypertension is an important risk factor for Cardiovascular Disease in Malaysia. Hypertension prevalence is at 42.6% and population-based control is poor at 26.8%.

**Objective:** The objective of the study is to ascertain the cardiovascular risk profile of prehypertensive and mildly hypertensive young adults against age-matched controls in rural Malaysia.

**Methodology:** 484 subjects attending primary care clinics were screened. 91 young adults with pre/mild hypertension and normotensive, age-matched controls were enrolled. The blood pressure and biochemical profiles for both groups were assessed and compared.

**Results:** Fifty-four subjects and 37 controls were enrolled. Amongst subjects, 46.3% had prehypertension and 53.7% had mild hypertension. Mean values compared to age-matched controls for MAP were  $102.68 \pm 7.48$  vs  $83.25 \pm 6.08$  mmHg (p< 0.001), LDL  $3.75 \pm 0.95$  vs  $3.32 \pm 0.93$  mmol/L (p=0.03), FBS  $4.65 \pm 0.54$  vs  $4.33 \pm 0.42$  mmol/L (p=0.03), BMI  $28.81 \pm 5.16$  vs  $24.12 \pm 4.91$  (p< 0.001). The mean BP was significantly associated with BMI, FBS, triglycerides, HDL and the TC/HDL ratio.