

ICPaLM 2021: International Congress of Pathology and Laboratory Medicine 2021 and 18th Annual Scientific Meeting, College of Pathologists: Exploring the Advances and Potential of Disruptive Technologies in Pathology and Laboratory Medicine, organised by the College of Pathologists, Academy of Medicine of Malaysia and held virtually on 3rd-5th March 2021. Abstracts of K. Prathap memorial lecture, plenary, symposium and paper (poster) presented are as follows:

K. Prathap Memorial Lecture: Exploring Advances and The Potential of Disruptive Technologies in Pathology and Laboratory Medicine

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Rapid advances in technology are impacting all areas of pathology. Over the next few years we can expect to see even more amazing things come into our world and into our practice. Both the technology that we use and the ways in which we deploy it will change the way we work. We have glimpses of advances that will change the way we assess histological slides, and the data science tools are being developed that will allow us to provide personalised reports of therapeutic options for tumours.

Integrative pathology, with the use of genetic and protein data alongside morphological interpretation, will come into every area of our practice, both benign and malignant. This presentation will highlight some of the new methods that are under development, some of the new tools becoming available and some of the changes that we can expect both in coming years and the longer term.

Plenary 2: Role of Molecular Genetic and Immunohistochemistry in Renal Neoplasms

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There have been major advances in the classification of renal cell neoplasia since the publication of the first classification by the World Health Organization (WHO) in 1981 and while the diagnostic emphasis has been on morphological features, the role of molecular genetics (MG) and immunohistochemistry (IH) is increasing. The Mainz Classification in 1986 established clear cell renal cell carcinoma (RCC), papillary RCC, chromophobe RCC and collecting duct carcinoma as distinctive tumor morphotypes, with renal medullary carcinoma later being added as a separate subtype of collecting duct carcinoma. It was also concluded that sarcomatoid RCC represented an extreme form of tumor dedifferentiation rather than a separate morphotype. Mucinous tubular and spindle RCC and translocation carcinomas were added to the classification in 2004 and here the role of IH and MG took on a new prominence. The Vancouver Classification of 2012 added tubulocystic RCC, acquired cystic disease-associated RCC, clear cell (tubulo) papillary RCC and hereditary leiomyomatosis RCC syndrome-associated RCC to the spectrum of RCC. Two further entities were also recognized. Hybrid oncocytic chromophobe tumor was classified as a variant of chromophobe RCC, while t(6;11) translocation carcinoma was added to the group of translocation carcinomas. In addition to these, three newly recognized morphotypes of RCC (thyroid-like follicular RCC, succinate dehydrogenase B deficiency-associated RCC and ALK-translocation RCC) were classified as emerging entities, emphasizing the increasing diagnostic role of IH. More recently eosinophilic solid and cystic RCC and biphasic papillary RCC have also been recognized as novel tumors with characteristic IH features.

Plenary 3: Using Autopsy Data – More Can Be Done

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Despite declining trends and numbers of autopsies throughout the world, large numbers of autopsies are still being performed annually. Findings from such autopsies are compiled in reports and frequently filed away with little attention given to the rich amount of information that can be obtained from such a large database of information. This presentation is a humble description of my personal journey and I hope an encouragement to the audience to think about the possibilities available to them and the opportunities to enrich knowledge and to prevent injuries and death.

CP06 Acute kidney injury (AKI) electronic alert in paediatric population

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Introduction: Electronic alert (e- alert) are intended to enable early detection of acute kidney injury (AKI). AKI e-alert is generated by lab information system (LIS) based on creatinine reference value (RV) ratio. It was introduced in Great Ormond Street Hospital for Children in August 2017. *Materials & Methods:* This was a retrospective three months data collection through EPIC information system from July to September 2019, two years after AKI e-alert implementation to identify the number of AKI alerts generated according to stages, underlying medical condition and the action taken by the paediatrician once alerted. *Result:* A total of 1812 AKI alerts were generated within 3 months; 64% stage 1, 26% stage 2 and 10% stage 3. AKI is more common in children aged less than 12 years old with the mean age of 5. Common causes of AKI observed from this study included in-patients with underlying cardiac abnormality undergoing cardiac surgery (24% in stage 1, 32% in stage 2 and 53% in stage 3) followed by patients with underlying haematological malignancy either on chemotherapy or post hematopoietic stem cell transplantation (20% in stage 1 and stage 3 respectively and 29% in stage 2). More than 60% of patients that required nephrology referral were in AKI stage 3. One false positive alert generated as stage 3 AKI was observed in this study. *Discussion:* AKI is common in children. The introduction of AKI e-alert allows early recognition and intervention to be delivered within appropriate time to prevent progression of kidney injury.

CP07 Weight status as a predictor for microalbuminuria among the Samarahan district rural community in Sarawak

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Introduction: Obesity and chronic kidney disease (CKD) have emerged as important public health problems. Microalbuminuria is a known early predictive factor for renal disease. This study aimed to determine the association between weight status and microalbuminuria among the rural adult community in Sarawak. *Materials & Methods:* A cross-sectional study was carried out among 610 subjects. A pre-tested questionnaire was used for social demographics, personal lifestyle and family history of CKD. The urine dipstick examination was used for detection of microalbuminuria and a measurement of 20 mg/L or above was considered as positive for microalbuminuria. Body mass index (BMI) was classified according to the Ministry of Health Malaysia criteria. Logistic regression analysis was performed to evaluate the relationship between the presence of microalbuminuria and BMI. *Results:* One-fourth (26.9%) of the rural adult population had microalbuminuria. A hierarchical binary logistic regression analysis revealed that BMI status of underweight (Adj. OR= 4.072, 95% CI=1.334, 12.427) and obese (Adj. OR= 2.715, 95% CI=1.492, 4.942) appeared to be important predictors of microalbuminuria. However, age, and gender had no association with microalbuminuria ($p>0.05$). *Discussion:* Among the studied subjects, 26.9% had microalbuminuria. Microalbuminuria in a rural adult community in Sarawak was associated with BMI status of underweight and obese in both men and women. We recommend further research to shed more light on the association between underweight and microalbuminuria among the high risk group in this community.

CP08 Detection of abnormal urine findings among asymptomatic pre-clinical medical students in Universiti Malaysia Sarawak

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Introduction: Renal disease may be an incidental finding during urinalysis. A dipstick urinalysis was conducted to estimate the prevalence of abnormal urine findings among asymptomatic pre-clinical medical students in the Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak. *Materials & Methods:* A cross sectional study involving 286 students was carried out from November 2018 to August 2019. First morning midstream urine samples were obtained from students and were tested by dipstick method. Students with abnormal urine findings were retested after 15 days. *Results:* Thirty-three (11.5%) students had urinary abnormalities at the first screening; 54.5% of them still had abnormal results at the second screening. Ketouria was the most common abnormality found with a prevalence of 2.4%, followed by glycosuria (1.4%), leucocyturia (1.4%), haematuria (0.7%) and nitriuria (0.3%). In microscopic examination, leucocyturia was the most common abnormality detected in four students (1.4%) followed by isolated haematuria in two of them. Among students with leucocyturia, two were diagnosed to be due to urinary tract infection. There was statistically significant association between glycosuria and males. The prevalence of ketouria was higher in females; however, no significant difference was observed between male and female students. Proteinuria was not present in any participant. *Discussion:* Urinary abnormalities were detected among asymptomatic preclinical medical students on dipstick and microscopic analyses. Further investigations are needed to elucidate the underlying aetiology of these abnormal findings.