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PP-01: Rational Discovery of Potential Monkeypox Virus DNA Polymerase Inhibitors

Jasmin Kong Pei Ting,¹ Heh Choon Han,² Naeem Shafqat.¹

¹ PAPRSB Institute of Health Sciences, Universiti Brunei Darussalam, Jalan Tungku Link, Gadong BE1410, Brunei Darussalam

² Department of Pharmaceutical Chemistry, Faculty of Pharmacy, Universiti Malaya, 50603 Kuala Lumpur, Wilayah Persekutuan Kuala Lumpur, Malaysia

Introduction: The monkeypox virus (MPV) outbreak was declared a public health emergency worldwide in July 2022. There are only a few approved antivirals used for the treatment of monkeypox hence, there is a need to discover potential anti-monkeypox drugs. This in silico study aims to identify the potential use of investigational and United States Food and Drug Administration (FDA) approved drugs as monkeypox virus DNA polymerase holoenzyme (MPV DPH) inhibitors.

Methodology: 8HG1 crystal structure was utilized as the target protein and cidofovir was used as the standard ligand in this study. Virtual screening using MtiOpenScreen was performed to identify top 50 potential drug candidates against 8HG1. Thorough docking was then carried out using AutoDock Vina for cidofovir and each of the top 50 ligands with exhaustiveness value of 100. In silico analysis was conducted through Discovery Studio Visualizer.

Results: The top five potential drugs identified were solcitinib, clazosentan, tezosentan, omipalisib and quinotolast. Overall, these five drugs have more interaction particularly electrostatic pi-interactions and have higher binding energies than cidofovir.

Conclusion: There is no antiviral activity of the top five potential inhibitors being reported previously. Therefore, this study will provide a framework for future in vitro and in vivo studies to explore the binding mechanisms potentially effective for the design of novel inhibitors against the MPV DPH.

PP-02: Platinum Hydrogen Supplement Attenuates Non-alcoholic Fatty Liver Disease Induced by a High Sugar and Fat Diet in C57BL/6 Mice

Audrey Kok,¹ Atiqah Suhaili,² Suwarni Diah,¹ Mei Ann Lim.¹

¹ Pengiran Anak Puteri Rashidah Sa'adatol Bolkiah Institute of Health Sciences, Universiti Brunei Darussalam

² Faculty of Science, Universiti Brunei Darussalam

Introduction: Hydrogen has antioxidant and anti-inflammatory properties, and preventative effects against cardiovascular, respiratory and metabolic diseases. This study evaluated the effects of a platinum hydrogen supplement (PHS) on non-alcoholic fatty liver disease (NAFLD) induced in mice by overnutrition of sucrose and lipids.

Methodology: Mice were randomly divided into four groups: (i) normal control diet group (NCD); (ii) normal control diet and platinum hydrogen supplement group (NCD+PHS); (iii) high sugar and fat diet group (HSFD); (iv) high sugar and fat diet and platinum hydrogen supplement group (HSFD+PHS) (n=3-8). Unpaired Student's t-test was used for all statistical analyses.

Results: After 9 weeks of intervention, the PHS reduced the liver and visceral fat weight although the reduction was not statistically significant (liver weight: HSFD group vs. HSFD+PHS group, $t = 1.13$, $P = \text{ns}$; visceral fat weight: HSFD group vs. HSFD+PHS group, $t = 0.73$, $P = \text{ns}$). The PHS lowered fasting blood glucose; reduced the total area under the curve in both the glucose tolerance test (HSFD group vs. HSFD+PHS group, $t = 3.78$, $P = 0.0003$) and insulin tolerance test (HSFD group vs. HSFD+PHS group, $t = 11.8$, $P < 0.0001$); and reduced intrahepatic levels of total cholesterol (HSFD group vs. HSFD+PHS group, $t = 0.90$, $P = \text{ns}$), total triglycerides (HSFD group vs. HSFD+PHS group, $t = 4.86$, $P = 0.0009$) and free fatty acids (HSFD group vs. HSFD+PHS group, $t = 1.54$, $P = \text{ns}$). Liver histology investigated with haematoxylin and eosin (H&E) revealed reduced lipid deposition and ballooning degeneration by PHS intervention.

Conclusion: The hydrogen in the PHS could improve NAFLD by influencing body parameters, lipid profiles and liver histology in a mouse model of NAFLD.

OP-01: Characteristics & 1-Year Management and Outcomes of Patients with Heart Failure with Reduced Ejection Fraction (HFrEF) at the Heart Failure Clinic in RIPAS Hospital.

Muhammad Zamir Zahran Bin Burhan, Erkin Erdal, Francis Lim Tiong Khim, Sofian Bin Dato Paduka Dr Haji Johar

PAPRSB Institute of Health Sciences, Universiti Brunei Darussalam, Jalan Tungku Link, Gadong BE1410, Brunei Darussalam

Introduction: Heart failure (HF) is a clinical syndrome as a result of impaired ventricular filling and/or ejection of blood. This research aims to describe the clinical characteristics of HFrEF patients, their management and one-year outcomes at the HF clinic at RIPAS Hospital.

Methodology: This research is a retrospective observational study. Relevant data from patients' medical records at the HF clinic were collected between January 2018 and December 2019. Data collected includes patients' clinical characteristics and management, including anti-HF medications and device therapy. After a one-year follow-up, outcomes including hospitalisations and deaths are recorded. Statistical analyses were performed for data interpretation.

Results: A total of 88 HFrEF patients were included, with a mean age of 47 years and predominantly male and of Malay ethnicity. The most common aetiology of HFrEF is hypertension. Nearly half the patients have a smoking history, and 26.1% have a history of non-compliance. 48.9% of patients were prescribed a combination of all three drug classes (ACEi/ARB/ARNI + BB + MRA), while 35.3% of patients received a combination of two drug classes (ACEi/ARB/ARNI + BB) during the initial visit. Device therapy use is uncommon. 71.6% of patients had a recovery of left ventricular ejection fraction (LVEF) after one year from the initial clinic visit. Between the initial visit and one year later, there were 22% hospitalisations due to HF and 6.8% deaths.

Conclusion: HFrEF patients in this study are notably younger than their Western and Asian counterparts. Relative to Western countries, a higher proportion of patients have a history of type 2 diabetes mellitus compared to myocardial infarction. Additionally, ischaemic aetiology is less common compared to Western countries. Consistent with other Asian countries, this study observed a less severe functional limitation based on the NYHA class compared to the West. Furthermore, NT-proBNP levels were higher than those reported in Western and some Asian countries. Moreover, linear regression analysis showed statistically significant improvement of LVEF with all prescribed anti-HF drug classes. One-year outcomes showed lower mortality rates but higher hospitalisation rates compared to some regions. This study provides valuable insights into the HFrEF patients of the HF clinic at RIPAS hospital and contributes to the limited data on HFrEF in Brunei Darussalam.

OP-02: The Impact of Pre-operative Indeterminate Lung nodules in the Surgical Management of Pancreatic Ductal adenocarcinoma

Ms Aelly Boey, A Bryce, D Holroyd, S Dreyer

West of Scotland HPB Unit, Glasgow Royal Infirmary School of Medicine, University of Glasgow

Introduction: The incidence of indeterminate lung nodules (ILN) in pancreatic ductal adenocarcinoma (PDAC) has increased due to adaptation of comprehensive pre-operative imaging. The clinical outcomes of ILNs in PDAC remain uncertain and can impede decision making for surgery. The study aims to determine the impact of ILN in outcomes following pancreatectomy. The study aims to determine the impact of ILN in outcomes following pancreatectomy.

Methodology: Patients with PDAC who had undergone resection with pre-operative chest imaging were evaluated from a prospectively maintained database at the West of Scotland HPB unit, Glasgow Royal Infirmary. The impact of ILNs on clinical outcomes including disease recurrence pattern and survival was determined.

Results: Of the 236 patients included in the study, 101 (43%) had preoperative ILNs while 135 (57%) had no ILNs. There was no difference in overall survival (OS) between patients with ILNs and those without (Median OS=27.0 months; $p=0.68$). There was a statistically significant difference between the proportion of individual who subsequently develop pulmonary metastases in those 2 groups (30% in the ILN group vs 17%; $p=0.021$). However, the presence of ILNs did not affect the proportion of patients developing extra-pulmonary metastases ($p=0.16$) and there was no difference in OS (p -value =0.89) in those with or without ILNs who developed extra-pulmonary metastases.

Conclusion: To conclude, presence of ILNs pre-operatively does not affect the overall survival of patients after surgery when compared with those without ILN. Presence of ILN prior to resection has a higher incidence of pulmonary metastases but this does not seem to affect the long-term OS, suggesting that pulmonary metastasis have a minimal impact on patients long-term outcome compared to other metastatic sites.

OP-03: The Prevalence of Impostor Phenomenon Amongst Undergraduate Nursing and Midwifery Students from the Articulate Programmes: A Cross-sectional Descriptive Study

Siti Nur Insyirah Sahali, Mursidi Haji Ali

PAPRSB Institute of Health Sciences, Universiti Brunei Darussalam, Jalan Tungku Link, Gadong BE1410, Brunei Darussalam

Introduction: Impostor Phenomenon (IP) has been purported as a feeling of inadequacy and self-doubt despite evidence of success or competence. IP has found to be prevalent across diverse demographics and could be observed among health profession students including nursing students. High IP scores have been linked with low self-esteem. This study aims to investigate the prevalence of Impostor Phenomenon amongst undergraduate nursing and midwifery students from the Articulate programmes.

Methodology: A cross-sectional descriptive study included 35 undergraduate nursing and midwifery students from Universiti Brunei Darussalam, selected through purposive sampling. The questionnaire adapted Clance Impostor Phenomenon Scale (CIPS) and Rosenberg Self-esteem Scale (RSES). A cut off value of 62 was used to determine impostorism. RSES utilised a three-tier scoring system, with low SE levels corresponding to scores between 10 and 25, medium levels between 26 and 29, and high levels between 30 and 40. The statistical analyses included descriptive statistics and chi-square tests of association to determine the relationship between IP and self esteem levels.

Results: Out of 35 students, 42.9% were having impostorism with 66.7% and 33.3% of the respondents being females and males respectively. No significant differences exist between the two genders. IP positively correlated with self-esteem ($p < 0.001$). Academic year significantly correlated with self-esteem level ($p = 0.044$).

Conclusion: Prevalence rate of 42.9% is similar to studies involving healthcare profession students. Coping with academic stress and clinical rotations may develop students' insecurities toward their competencies. The relationship of IP and self-esteem may stem from impostors' tendency to blame themselves for failures and overgeneralise these failures, leading to negative feelings. Impostorism negatively affects the psychological well being of students. Intellectual and professional development may be compromised if IP is not addressed. Counselling and self-development plans introduced by educational institutions can assist students in smoother academic transitions.

OP-04: Cataract Patients' Demographics and Visual Status: A Retrospective Study.

Mohammad Haziq Fakhry bin Mohammad Bahtiar,¹ Sharimawati Sharbini,¹ Sajid Adhi Raja,² Adlina Khairunnisa Talip,² Ted Maddess,⁴ Siti Nurliyana Abdullah,^{3,4}

¹ Pengiran Anak Puteri Rashidah Sa'adatol Bolkliah Institute of Health Sciences. Universiti Brunei Darussalam, Gadong, Brunei Darussalam.

² Eye Clinic, PMMPMHAMB Hospital, Tutong, Brunei Darussalam.

³ Department of Ophthalmology, Brunei Eye Centre, RIPAS Hospital, Brunei Darussalam.

⁴ Eccles Institute of Neuroscience, John Curtin School of Medical Research (Bldg. 131), Australian National University, Canberra, ACT, 2601, Australia.

Introduction: Cataract is one of the leading causes of preventable visual impairment (VI) and blindness. Understanding cataract profiles is beneficial in providing timely and targeted management, optimising clinical resources and improving prognosis. This study aims to describe cataract patients' demographic factors (age, gender and ethnicity) and clinical presentations (visual acuity, VI, refractive errors and systemic diseases) and assess any association between the demographics and systemic diseases with VI.

Methodology: This study was a retrospective analysis of data from 91 cataract patients seen at the optometry unit, Pengiran Muda Mahkota Pengiran Muda Haji Al-Muhtadee Billah Hospital from 1st January 2019 to 31st January 2019. Descriptive statistics, Chi-square test, Fisher's exact test and Multiple Logistic Regression tests were conducted to analyse the data and assess the associations between demographics and VI, with $p < 0.05$ indicating a significant value.

Results: Prevalence of cataracts was higher among those ≥ 60 years (76.92%) and Malays (94.51%), while it was equal among males (49.45%) and females (50.55%). Visual acuity was significantly improved after refraction ($p < 0.001$). Visual impairment (VA $\leq 6/18$) was present in over half of the cataract patients (56.04%), with mild VI being the most prevalent (27.47%). Refractive errors were present in all cataract patients, with myopia being the most prevalent (46.15%). VI among the cataract patients was significantly associated with older age ($p < 0.001$), females ($p < 0.05$) and diabetes mellitus ($p < 0.05$).

Conclusions: Refractive measures in managing cataract patients are fundamental to reduce visual impairment, even after intraocular lens implantation to conserve vision. Distribution of healthcare resources and timely referral may be focused on older age, females and diabetic cataract patients to efficiently conserve maximal vision. Overall, the study emphasised the timely management of cataract patients to reduce visual impairment.

Keywords: Cataract, demographics, refraction, refractive errors, systemic diseases, visual acuity, visual impairment