

# International Virtual 2023 Medical Research Symposium

## 'Spearheading Responsible Research & Innovation towards Achieving Sustainability'

## 7<sup>th</sup>-8<sup>th</sup> December 2023

Organised by:

## Kuliyyah of Medicine International Islamic Univeristy Malaysia

ONC023	The effect of antiretroviral on aids progression among hiv-infected people in Pahang, Malaysia	62
ONC025	Association of physical activity with biochemical parameters of multiracial hemodialysis patients in Negeri Sembilan and Klang Valley, Malaysia	63
ONC026	Preliminary study: Development and characterization of ointment formulations for atopic dermatitis skin	65
ONC027	Studies of communication etiquette between medical doctors and patients of different genders: The islamic perspective	66
	POSTER PRESENTATION (CLINICAL)	
PC001	The effectiveness of online social network-based intervention for stress management among SASMEC's nursing staff	67
PC002	Clinical profile and outcomes of penetrating keratoplasty in Sultan Ahmad Shah Medical Centre 7 years review	68
PC003	Profiling the clinical characteristics and bacteriological spectrum of hospitalized hand infections in a hand referral center	69
PC004	Branch retinal vein occlusion post-phacoemulsification surgery – a case report	70
PC005	Modified sagittal costoclavicular catheter – a novel regional anaesthesia technique for catheter securement targetting the brachial plexus	71
PC006	Case series of challenging cervical fibroid	72
PC007	Impacted maxillary canine in orthodontic clinic: a retrospective study	73
PC008	Assessment of pain control and patient satisfaction with post operative acute pain management by primary team 24 hours after discharge from acute pain service	74
PC009	Petrous apicitis and otogenic internal jugular vein thrombosis post cortical mastoidectomy: lessons to learn	75
PC010	Extracranial meningioma: A rare cause of severe epistaxis	77
PC011	Glycemic control and its associated factors among type 2 diabetes mellitus in a selected hospital university at east coast Malaysia	78
PC012	Diagnostic challenges of lymphoma diagnosis: An unusual case of mantle cell lymphoma	79
PC013	The value of 18f-fdg pet/ct in erdheim-chester disease	80
PC014	Digital health intervention to mitigate psychological distress on non-clinical hospital staff in Sultan Ahmad Shah Medical Centre	81
PC015	A rare case of watershed infarct secondary to thyrotoxic encephalopathy	82
PC016	Catastrophic disseminated tb presented with extensive acute transverse myelitis	83
PC017	Pulmonary hodgkin lymphoma: A rare aetiology of a cavitary lung mass	84
PC018	Challenges in distinguishing retroperitoneal lymphoma from radiological evaluations	85
PC019	Disseminated tuberculosis in an immunocompetent young adult involving the middle ear, mastoid, brain, larynx and lungs – a case report	86
PC020	A case series on transient abnormal myelopoiesis in down syndrome	87
PC022	Correlation of type 2 diabetes mellitus with liver fibrosis on ultrasound elastography: A narrative review	88
PC023	Anterior displacement of anus in a neonate coupled with complex congenital heart disease	89
PC024	Synchronous bilateral breast carcinoma with discordant histology	90
PC025	Pyocalicosis mimicking a large renal cyst: A case report	91

#### PC020

### A Case Series on Transient Abnormal Myelopoiesis in Down Syndrome

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Introduction: Transient Abnormal Myelopoiesis (TAM) is a myeloproliferative disorder that can develop in 10% to 15% of newborns with Down syndrome. It may present with a high count of blast cells and can resemble congenital leukemia. This series discusses two cases of TAM, both of which achieved sustained remission a few months after their diagnosis. Case Report: In the first case, a baby boy with Down syndrome presented with congenital pneumonia at birth, bilateral eye conjunctivitis and an enlarged liver. Blood film showed 34% blast cells, and thrombocytopenia. After a month of stay he was discharged with a normalized blood count and no detectable blast cells in the peripheral blood film. While the second case involved a baby girl with Down syndrome who was treated for congenital pneumonia. Her total white blood cell count was elevated, with 33% blast cells characterized by prominent nucleoli and bluish, blebbing cytoplasm. After a week, her blast cells increased to 80%. Immunophenotyping performed showed 72% of blast cells which displayed heterogenous positivity for CD34, CD33, HLADR, CD61 (in 54% of blast population), CD41a (in 54% of blast population), CD36, CD56, CD123, and CD9 (megakaryocytic phenotype). They were negative for cy MPO, B and T cell markers. She started treatment with low-dose Cytarabine. Discussion: Down syndrome is associated with TAM and and myeloid leukemia associated with Down Syndrome (ML-DS). The detection of exon2/3 GATA1 mutation via sequencing is essential in the diagnosis of both TAM and ML-DS however this test is not readily available at our center. TAM typically resolves within three months. However, close monitoring is essential because multiorgan failure can lead to a mortality rate of up to 20%.

Keywords: Neonates; non-disjunction trisomy 21; transient abnormal myelopoiesis