PROFESSIONAL PROFILE

DR ANGELA RANKINE-MULLINGS

Senior Research Fellow
Caribbean Institute for Health Research (CAIHR)
The University of the West Indies
Mona Campus
Kingston, Jamaica

Paediatrician, Researcher and Lecturer with 30 years of experience working nationally and internationally including 13 years of experience in the management of sickle cell disease specifically in the area of hydroxyurea therapy and the prevention of paediatric sickle cell

EDUCATION

- **MB; BS** (Bachelor of Medicine, Bachelor of surgery (1993): The University of the West Indies, Mona, Kingston, Jamaica
- **Member of the Royal College of Paediatrics and Child Health**, **MRCPCH**: Qualified by examinations (2012) - Royal College of Paediatrics and Child Health, 5-11 Theobald's Road, London WC1X 8SH.
- **PhD Candidate** (August 2019 to Present): Epidemiology - Understanding the role of arterial stiffness in children with sickle cell anaemia based on Transcranial Doppler velocity defined stroke categories.

PROFESSIONAL EXPERIENCE

RESEARCH

Dr Rankine-Mullings utilizes her wide multicultural and international experience to enrich her work at the Caribbean Institute for Health Research. She has generated **over 1.5 million United States Dollars** in Research funding. While at CAIHR, Dr Rankine-Mullings has participated in investigator-led and industry funded studies and has been at the forefront of clinical trials in hydroxyurea, including the NIH sponsored, SCATE (Sparing Conversion to Abnormal Transcranial Doppler velocity Elevation) trial (NCT01531387) and the EXTEND trial (NCT02556099), in collaboration with Cincinnati Children's Hospital Medical Centre, which have advanced the use of hydroxyurea as a non-transfusion disease modifying therapy.

Her research focal areas include in part: (i) the prevention of neurologic injury in sickle cell disease (ii) Expansion of hydroxyurea use in sickle cell disease (iii) the effects of emerging infections in vulnerable populations. Additionally, Dr Rankine-Mullings seeks to prevent stroke in children with sickle cell anaemia through Transcranial Doppler screening and hydroxyurea treatment.

Dr Rankine-Mullings PhD work extends the understanding of vascular biology in children with sickle cell disease by examining arterial stiffness impairment in this population. Her PhD project furthers work in the prevention of neurologic injury in sickle cell disease and is focused on the topic: "Understanding the vascular biology underpinning the development of neurologic injury in sickle cell disease through Transcranial Doppler ultrasonography and arterial stiffness measurements in children with sickle cell disease".

With respect to experience in the conduct of clinical trials, over the past 13 years, Dr Rankine-Mullings has worked as an investigator in the areas of hydroxyurea therapy and other sickle cell disease modifying therapies. Along with the members of an outstanding team she has provided technical and administrative management of these trials inclusive of full regulatory compliance from start-up to close-out, data management and dissemination of findings through publications and conference presentations. Specific trials include:

- **2018-2022**. **Overall Chief Investigator of this Multicentre Trial and Local Principal Investigator**. A *Prospective Open-Label Pharmacokinetic Study of an Oral Hydroxyurea Solution in Children with Sickle Cell Anaemia (NCT03763656*).
- **2014-2022**. **Co-investigator.** *Expanding Treatment for Existing Neurological Disease (EXTEND) Protocol 4.0 and (EXTEND EXTENSION), Protocol 4.3*. (NCT02556099)
- **2018-2020**. **Co-investigator.** *A Phase 3, Double-Blind, Randomized, Placebo-controlled, Multi-centre Study of Voxelotor* Administered Orally to Patients with sickle Cell Disease. (NCT03036813)
- **2012-2014**. **Co-investigator.** Sparing Conversion to Abnormal TCD (Transcranial Doppler) Elevation (SCATE) Clinical Trial.
- **2014-2016**. **Co-investigator.** *A Phase II, Multi-centre, Randomized, Placebo-Controlled, Double-Blind, 12-Month Study to Assess Safety and Efficacy of SelG1 With or Without Hydroxyurea Therapy in Sickle Cell Disease Patients with Sickle Cell-Related Pain Crises (SUSTAIN)*.
- **2011-2012**. **Co-investigator.** *A Multi-centre, Randomized, Double Blind, Dose Escalation Safety Study of MP4CO in Clinically Stable Adult Sickle Cell Patients with the Goal of Assessing the Safety of the Investigational Drug MP4CO*.
- **2011 -2013**. **Co-investigator.** *HQP 1001 – 006. A Randomized, Placebo-controlled, Study of HQK-1001 in Sickle Cell Disease*.

TRAINING

Dr Rankine-Mullings is a lecturer in the Masters of Science (MSc) Programme in the areas of Nutrition and Epidemiology; The University of the West Indies.

INTERNATIONAL WORK EXPERIENCE WITH COUNTRY SPECIFIC MEDICAL REGISTRATION:

Dr Rankine-Mullings has worked internationally for over 10 years. In addition to Jamaica, she has country specific registration in:

- United Kingdom (2002 - Present)
- Belize (1997 -2001)
- Grenada (1996)

RECENT PRESENTATIONS (2023)

- Speaker - Oral Abstract presenter - Hydroxyurea Improves Intelligence Quotient Scores in Children with Sickle Cell Anaemia and Elevated Transcranial Doppler Velocity. American Society of Haematology- ASH2023, December 8th -12th, 2023, San Diego, California, USA.
- Speaker – Oral Abstract presenter - Stroke in the young: Understanding the role of arterial stiffness in children with sickle cell anaemia and abnormal Transcranial Doppler velocity. ONEUWI Post Graduate Conference. Virtual. November 15th-17th, 2023
- Poster Presenter - Stroke in the young: Understanding the role of arterial stiffness in children with sickle cell anaemia and abnormal Transcranial Doppler velocity - 2023 Ministry of Health and Wellness 14th National Health Research Conference. November 15-17, 2023.

PUBLICATIONS

- **Rankine-Mullings A**, Keenan R, Chakravorty S, Inusa B, Telfer P, Velangi M, Ware RE, Moss JJ, Lloyd AL, Edwards S, Mulla H. Efficacy, safety, and pharmacokinetics of a new, ready-to-use, liquid hydroxyurea in children with sickle cell anemia, Blood Adv. 2023 Aug 22;7(16):4319-4322.
- **Rankine-Mullings AE**, Logan TM, Asnani M, Serjeant GR. Early splenomegaly and septicaemia in homozygous sickle cell disease: A birth cohort study. Pediatr Blood Cancer. 2023 Mar;70(3):e30161.
- **Rankine-Mullings AE**, Nevitt SJ. Hydroxyurea (hydroxycarbamide) for sickle cell disease. Cochrane Database of Systematic Reviews 2022, Issue 9. Art. No.: CD002202.
- **Rankine-Mullings AE**. Ulcerative colitis in patients with sickle cell disease: a rare but important co-morbidity. Paediatr Int Child Health. 2022 Feb;42(1):1-4:
- **Rankine-Mullings A** , Reid M, Soares D, Taylor-Bryan, C MB,BS, PhD, BSc, DM, Margaret Wisdom-Phipps, RN, RM, Karen Aldred, MSc, Teresa Latham, MA, Jennifer Knight-Madden, MB,BS, PhD, MB BS, Asha Badaloo, PhD, Adam Lane, PhD, Robert J. Adams, MD, MS and Russell E. Ware, MD, PhD. Hydroxyurea treatment reduces Transcranial Doppler (TCD) velocity in the absence of transfusion support in children with sickle cell anaemia, elevated TCD velocity, and cerebral vasculopathy: The EXTEND trial. Br J Haematol.2021 Nov;195(4):612-620.
- **Rankine-Mullings AE**, Morrison-Levy N, Soares D, Aldred K, King L, Ali S, Knight-Madden JM, Wisdom-Phipps M, Adams RJ, Ware RE, Reid ME. Transcranial Doppler Velocity among Jamaican Children with Sickle Cell Anaemia: Determining the Significance of Haematological Values and Nutrition. Br J Haematol. 2018 April; 181(2): 242-251.
- **Rankine-Mullings AE**, Little C, Reid ME, Soares D, Taylor-Bryan C, Knight-Madden JM, Stuber S, Badaloo A, Aldred K, Wisdom-Phipps M, Latham T, Ware RE. Expanding Treatment for Existing Neurological Disease (EXTEND): An Open-Label Phase II Clinical Trial of Hydroxyurea Treatment in Sickle Cell Anemia. JMIR Res Protocol. 2016 Jul-Sep; 5(3): e185.
- Hankins JS, McCarville MB, **Rankine-Mullings AE**, Reid ME, Lobo CL, Moura PG, Ali S, Soares DP, Aldred K, Jay DW, Aygun B, Bennett J, Kang G, Goldsmith JC, Smeltzer MP, Ware RE. Prevention of Conversion to Abnormal Transcranial Doppler With Hydroxyurea In Sickle Cell Anemia: A Phase III International Randomized Clinical Trial. Am J Hematol. 2015 Dec; 90(12): 1099-1105.

- **Rankine-Mullings AE**, Owusu-Ofori, S. Prophylactic antibiotics for preventing pneumococcal infection in children with sickle cell disease. Cochrane Database of Systematic Reviews, 2021, Issue 3. Art. No.:CD003427.
- **Rankine-Mullings, A.E**., Logan, T.M., King, LG. et al. The risk of acute events among patients with sickle cell disease in relation to early or late initiation of care at a specialist center: evidence from retrospective cohort study. BMC Pediatr 20, 373 (2020).
- **Rankine-Mullings AE**, Reid ME, Moo Sang M, Richards-Dawson M-A, Knight – Madden JM. A Retrospective Analysis of the Significance of Haemoglobin SS and SC in Disease Outcome in Patients with Sickle Cell Disease and Dengue Fever. EbioMedicine. 2015 August; 2(8):937-941.
- **Rankine-Mullings AE**, Serjeant G, Ramsay Z, Hanchard NA, Asnani M. The additional genetic diagnosis of homozygous sickle cell disease in a patient with Waardenburg-Shah syndrome: a case report. J Med Case Rep. 2019;13(1):10. Published 2019 Jan 13.
- **Rankine-Mullings AE**, Knight-Madden JM, Reid ME, Ferguson T. Gangrene Of the Digits of The Right Lower Limb In a Patient with Homozygous Sickle Cell Disease and Ulcerative Colitis. Clin Pract 2014; 4(1):610.
- Bartlett Rachel, Ramsay Zachary, Ali Amza, Grant Justin, **Rankine-Mullings Angela**, Gordon-Strachan Georgiana, Asnani Monika. Health-related quality of life and neuropathic pain in sickle cell disease in Jamaica, Disability and Health Journal, 2021.

PROFESSIONAL AWARDS

- **A Best Oral Abstract Winner-** The inaugural One UWI Postgraduate Student Conference, School for Graduate Studies and Research, The University of the West Indies, November 15th-17th, 2023.

- **Principal's Research Award Recipient, (The University of the West Indies):**
    - Best Research Publication, Faculty of Medical Sciences, Research Awards 2022 received July 2023.
    - Best Research Publication, Faculty of Medical Sciences, Research Awards 2019
    - Research Project with the Greatest Business/Economic/ Development Impact, Faculty of Medical Sciences, Research Awards 2017.

PROFESSIONAL MEMBERSHIP

- Patron - Organisation for Sickle Cell Anaemia Research (OSCAR) -Bristol, BS5 0NP, UK
- Associate Member of the American Society of Haematology (ASH)
- Member of CAREST (CAribbean network of REsearchers on Sickle cell disease and Thalassemia)
- Member of the Royal College of Paediatrics and Child Health
- Member of Cochrane and Author of two reviews