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RHD Pulse

Newsletter



Welcome

Welcome to the first edition of the quarterly RHD Pulse newsletter in which we share rheumatic fever (RF) and rheumatic heart disease (RHD) related activities from a featured region alongside key global updates. This is a joint publication of Reach, The World Heart Federation, and PASCAR. We look forward to carrying this important work forward in the coming months!

Regional Updates

PASCAR RHD Taskforce Elects New Chair, Dr Emmy Okello



Dr Emmy Okello was unanimously elected as the new chair of the [PASCAR RHD taskforce](#) during a lunchtime meeting at the joint 15th Pan-African Society of Cardiology (PASCAR) and Kenyan Cardiac Society (KCS) congress held in Mombasa, Kenya in November last year.

Dr Okello, an interventional cardiologist and researcher, is the Head of the Cardiac Catheterisation Department at Uganda Heart Institute in Kampala and a recognised leader in RHD in the region. Dr Okello's tenure as chair of the PASCAR RHD taskforce will run from 2022 to 2026. During this time, he plans to drive the adoption of resolution WHA 71.14 passed in 2018, through small grant projects, advocacy work by the working groups, and promoting research into new frontiers particularly around Group A Streptococcal biology and latent RHD.

RF/RHD at the Joint 15th PASCAR and KCS Congress, Kenya

RF/RHD featured prominently at the congress with presentations on capacity building, maternal and neonatal outcomes, imaging for decision making, and secondary prophylaxis for latent RHD, among others. In addition, fifteen RF/RHD-related abstracts were published in a special [supplemental issue](#) of the Cardiovascular Journal of Africa. Abstract topics touched on surgical repair techniques and outcomes, diagnostics, epidemiology, and omics (genomics, proteomics, and metabolomics) with the studies coming from Senegal, Sudan, Uganda, South Africa, and Tanzania.

Uganda's GOAL Trial Results

The much-anticipated results of a randomised controlled trial in Ugandan children and adolescents with latent RHD to evaluate the efficacy of secondary antibiotic prophylactic penicillin compared to no prophylaxis were published in the [New England Journal of Medicine](#) on 13 November 2021. Led by Dr Andrea Beaton, a paediatric cardiologist at Cincinnati Children's Hospital in collaboration with investigators from Children's National Hospital (Washington D.C.), Murdoch Children's Research

Institute (Australia), and the Uganda Heart Institute, the trial was dubbed “Gwoko Adunu pa Lutino (GOAL), meaning ‘protect the heart of a child’.

Investigators found that patients with latent RHD who received prophylactic penicillin were significantly less likely to experience disease progression compared to those who did not receive treatment - an important finding for future treatment recommendations and further research.



“We have a funded follow-up study called ‘GOAL Post’ from the Trasher Research Fund that will follow these kids for another five years,” Beaton says. “That study will look at the durability of prophylaxis in preventing adverse outcomes as well as determining whether it is safe for children to stop antibiotic prophylaxis once their heart returns to normal. We’re also submitting a study to the National Heart, Lung, and Blood Institute looking at oral versus intramuscular penicillin, which may be a lot more practical in low-resource settings.”

RHD Control in Tanzania

Dr Pilly Chillo currently leads an RHD control programme in Tanzania which focuses on awareness raising and healthcare worker training. Supported by Harvard’s [Bernard Lown Scholars in Cardiovascular Health Program](#), the WHO-Tanzania Office and under the MUHAS (Muhimbili University of Health and Allied Sciences) Centre of Excellence in Cardiovascular Sciences, the programme has conducted several high-level RHD stakeholder meetings, developed training materials for school-based RHD control programmes, conducted a primary school RHD screening survey, and participated in mass media campaigns to raise RHD awareness in the country.

Dr Chillo's team has also developed a short course on management of sore throat, ARF and RHD in the primary healthcare setting that aims to equip primary healthcare workers with up-to-date knowledge, skills and competencies to correctly diagnose, manage and keep registers of Strep A infections, ARF and RHD in their communities. "Our plan is to conduct this course throughout Tanzania, reaching out to all primary healthcare workers," says Dr Chillo.



Sudan's Prof Sulafa Ali Wins WHF Advocacy Award

Winners of the 2021 World Heart Awards, which celebrate organisations and individuals who have gone above and beyond in their pursuit to fight cardiovascular disease and promote heart health in their communities, were [announced](#) by the World Heart Federation (WHF) on 25 February 2022. Professor Sulafa Ali of Sudan along with [HEARTs](#) in the Americas were the winners of the WHF Advocacy Award in Cardiovascular Health.



Prof Ali is a consultant paediatric cardiologist at Sudan Heart Institute and Professor of paediatric cardiology at the University of Khartoum. She has been credited with almost single-handedly introducing paediatric cardiology as a sub-specialty in Sudan – a remarkable accomplishment in a country where political instability has undermined much of the health infrastructure. Her work in establishing Sudan's national RHD control programme and a paediatric cardiology fellowship programme at the Sudan Medical Specialization Board to train young cardiologists in Africa makes her a well-deserved recipient of this award.

Strep A Vaccine Development

- Phase 1 clinical trial of the [StreptAnova™ vaccine](#), led by Professor James Dale (USA), has been completed and the results published.
- Work led by Professor Michael Good (Australia) has produced two successful [Strep A vaccine candidates in animal models](#); phase 1 clinical trial preparations are underway.
- A [human infection model](#) has been developed, which will provide a platform for testing Strep A vaccine candidates in humans.
- The Strep A Vaccine Alliance ([SAVAC](#)), in alignment with the World Health Organization (WHO) Strep A Vaccine Development Roadmap, is currently working toward the development and use of safe, effective and affordable Strep A vaccines.
- Australia and New Zealand continue their Strep A vaccine development efforts with support from their respective governments through the Coalition to Advance Vaccines Against Group A Streptococcus ([CANVAS](#)): A Trans-Tasman Initiative Against Rheumatic Fever, which began in 2013.

Working Towards a Safe and Secure Supply of BPG

- An informal technical working group to improve access to benzathine penicillin G (BPG) was formed by the WHO with relevant stakeholders (Clinton Health Access Initiative, Reach and the World Heart Federation, etc.) and UN agencies (UNICEF supply division, UNFPA etc.). WHO leads the working group to address the issue of supply security and quality assurance of BPG.
- The principal aim of the working group is to achieve WHO prequalification (PQ) of both the active pharmaceutical ingredient and finished pharmaceutical products, as a critical first step to ensuring a quality product and addressing supply chain issues. The working group is working with BPG manufacturers and looking at market shaping strategies to help facilitate a healthy market for the drug.
- The working group has developed a funding proposal to mobilise funds for providing PQ-related technical assistance to the manufacturers in order to accelerate WHO PQ with consideration of market shaping strategies.

- A communications plan is being developed to sensitise potential donors/investors to this issue.

WHO Guideline Development

- At the request of Member States, the WHO identified the development of an RF/RHD guideline as a key priority area in 2019.
- A guideline development group has been appointed and the scope of the guideline agreed upon.
- The future guideline will address the primary and secondary prevention of RF/RHD.
- WHO's next steps are to mobilise resources and commission systematic evidence reviews to support the guideline development.

Teaching Snippet

BPG Administration

BPG injections require careful administration by healthcare workers. Follow this useful five step protocol, adapted from Sudan's national guide, with your RHD patients to ensure safe and less painful BPG administration:

Step 1: Ask the Patient About their History of Allergy

- If the patient has a history of severe (penicillin) allergy – Don't give BPG, give Erythromycin.
- If the patient does not have a history of allergy – Give BPG according to the 5 step protocol.

Step 2: Prepare the Necessary Items

- One 5 ml syringe (Lure Lock)
- One 10 ml syringe
- One vial of local anaesthetic lidocaine (Lignocaine) 2% (or sterile water for injection)
- One BPG ampoule 1.2 million units
- One adrenaline vial 1:1000
- One antihistamine vial

Step 3: Prepare the Injection

- Using the 5 ml lure lock syringe, draw an appropriate amount of local anaesthetic (lidocaine) as diluent for the BPG powder (making sure it's not cold)
- Inject the diluent into the BPG vial (for patients weighing 30 kg or more use 1.2 million units and for patients weighing less than 30 kg use 600 000 units)
- Mix gently until dissolved
- Draw back into the 5 ml syringe
- Change the small needle with the large bore needle of the 10 ml syringe

Step 4: Prepare the Patient and Give the Injection

- Ask the patient to lie on their stomach/abdomen
- Mark the patient's preferred site for the injection (appropriate sites include: dorsogluteal (buttock), vastus lateralis (thigh) and ventrogluteal (hip) muscles)
- To minimize pain, press with your thumb over the site for 10 seconds
- Aspirate first to avoid veins, then inject slowly

NB: NEVER EVER GIVE BPG INTRAVENOUSLY AS THIS LEADS TO IMMEDIATE DEATH/MORTALITY!

Step 5: Observe and Treat Reaction

- Observe for 15 minutes
- If an allergic reaction develops:
- Local Reaction (itching, hives) - Give an antihistamine injection and call the doctor
- Collapsed, feeling dizzy - Put the patient on the floor with their legs up, give adrenaline (0.3 ml for patients younger than 7 or 0.5 ml for patients 7 years or older), call for help and start CPR if needed.

Upcoming Events

- 7-10 June 2022 - [21st Lancefield International Symposium for Streptococci and Streptococcal Diseases \(LISSSD\)](#)
- 26-29 August 2022 – [European Society of Cardiology \(ESC\) Congress](#)
- 29 September 2022 – [World Heart Day](#)
- 7-9 October – [ACC Middle East 2022 together with the 13th Emirates Cardiac Society Congress](#)
- 13-15 October 2022 - [77th Brazilian Congress of Cardiology together with the World Congress of Cardiology \(WCC\)](#)
- 27 August-1 September 2023 - [8th World Congress of Pediatric Cardiology and Cardiac Surgery \(WCPCCS\)](#)

Are you working on something Strep A, RF, or RHD-related that you would like to see in the next edition? Please get in touch:

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