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Revisiting a neglected symptom: clinical experience using the Hyfe cough tracker in malaria patients

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Abstract:

Malaria remains the most important human parasitic disease causing over 240 million cases and 600.000 deaths in 2020. Acute respiratory distress can be present in up to 40% of children with severe malaria and up to 50% of patients have a cough of new onset. In spite of these notable respiratory features, the diagnosis of malaria remains blood-based which fundamentally restricts diagnosis to individual interactions with a health care worker. The usage of devices that can monitor and analyze coughs with artificial intelligence software is an entirely new, low-cost, non-invasive tool. This can be leveraged for malaria screening and differential diagnosis with bacterial pneumonia and other key respiratory conditions possibly improving the use of antimicrobials in settings with limited resources. To assess the presence of cough as one of the symptoms of malaria, we used a smartphone-based App (Hyfe cough tracker) in our clinical practice in the community health center of Mopeia, Mozambique. We attended clinically 63 children (1months - 11 years) who consulted for malaria (33) or any respiratory symptoms (30). As part of the clinical examination, the children were monitored for 30 minutes with a smartphone running Hyfe placed in a shoulder pouch. Overall, 63% of children had at least one episode of cough, this was similar in both groups. Patients with a positive malaria test had a median of 4 episodes/30min and those consulting with respiratory complaints had a median of 2. Malaria patients had an almost two-fold probability to experience more than 10 episodes of cough/30min than patients with other respiratory diseases. These results stress the importance of respiratory symptoms in malaria patients and open the

door to better quantify cough as a biomarker for this disease.

Category (Complete): Malaria - Diagnosis - Challenges and Innovations

Presentation Preference (Complete): Oral

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