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Transdermal drug delivery of Asiatic acid influences renal function and electrolyte handling in *Plasmodium berghei*-infected Sprague-Dawley male ratsGreanious Alfred Mavondo^{1,2} and Musabayana C T¹¹University of KwaZulu Natal, South Africa²National University of Science and Technology, Zimbabwe

Background & Aim: Higher prevalence of malaria related renal failure, current malaria drugs nephrotoxicity and drug resistance to malaria calls for continued research in anti-parasitic as well as anti-disease pharmaceuticals. Asiatic acid has antioxidant, pro-oxidant and diuretic properties. Here we report influence of Asiatic acid-pectin hydrogel matrix patch application in *P. berghei*-infected Sprague Dawley rats on renal function and electrolyte handling.

Materials & Methods: Asiatic acid (5 mg/kg)-pectin patch was applied on the dorsal neck region of the rat on day 7 post infection and monitored for parasitaemia, physicochemical changes. Urine, blood and plasma were collected for measuring various biochemical parameters.

Results: Asiatic acid-pectin patch application had significant influence on food and water intake as well as weight changes, urine electrolytes, glomerular filtration rate, inflammatory and antioxidant markers together with hormonal changes of aldosterone and vasopressin.

Conclusion: Application of the once-off Asiatic acid (5 mg/kg)-pectin patch influence renal function and renal electrolyte handling while ameliorating, biochemical and hormonal derangements induced by malaria.

Biography

Greanious Alfred Mavondo is a Chemical Pathologist and Lecturer at the National University of Science and Technology, Zimbabwe. His passion in human pathophysiology and management has led him into the investigation of the malaria pathophysiology in animal models using phytochemicals as alternative treatment for the disease. He has shown that Asiatic acid, a pentacyclic triterpene, is able to ameliorate severe malaria anemia, malaria associated inflammation, malaria oxidative stress, abrogate malaria induced glucose homeostasis derangements with preservation of renal function and electrolyte handling.

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