

3rd International Conference on **Genomics & Pharmacogenomics**

September 21-23, 2015 San Antonio, USA

Effect of valproate, sodium benzoate and dextromethorphan in hyperglycemic captive bred Vervet monkeys (*Chlorocebus aethiops*)

Zandisiwe Emilia Magwebu
Medical Research Council, South Africa

The Primate Unit and Delft Animal Centre (PUDAC) of the SA MRC maintain the only research colony of captive bred Vervet monkeys in South Africa. A small percentage (7%) of this colony has congenital cataracts and was later established that the affected individuals had high levels of glycine in their plasma and Cerebrospinal Fluid (CSF). Although cataracts have been documented for a variety of primate species, hyperglycinemia as well as this rare and unusual association of conditions have not been reported in the literature before, and clearly need elucidation. The study was aimed at investigating the pharmacodynamics of Non-Ketotic Hyperglycinemia (NKH) therapy in induced and cataract individuals with hyperglycinemia (spontaneous). Twelve animals were selected for a three months study and assigned into two groups (induced and spontaneous) and a control. Blood, urine and CSF were collected in order to determine glycine levels for baseline, induction (phase 1: valproate), treatment (phase 2: sodium benzoate and dextromethorphan) and washout period. In phase 1, 50 mg/kg of valproate only induced a slight increase in glycine levels, and was not statistically significant ($p=0.55$). However, platelets, alkaline phosphatase, alanine aminotransferase and total protein biochemistry changes were clinically significant ($p<0.05$). In phase 2, reduction of CSF and plasma glycine levels were observed in both groups, but significant change was seen in the spontaneous group ($p=0.01$). A dose of 50 mg/kg valproate did not show significant effect on Vervet monkeys. However, the combination of sodium benzoate and dextromethorphan showed beneficial effect in reducing glycine levels in the spontaneous group.

Biography

Zandisiwe Emilia Magwebu is a final year PhD student at the University of the Western Cape in South Africa. She is a Research Intern for the South African Medical Research Council. In 2014, she was part of the Next Generation Scientist (NGS) group at Novartis Pharma, Basel, Switzerland..

zmagwebu@mrc.ac.za

Notes: