

Thyroid status and adenosine triphosphatase activity in experimental *Trypanosoma congolense* infection in rabbits

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Abstract:

The effect of trypanosome infection on the plasma levels and ratios of tri-iodothyronine (T3) and thyroxine (T4) as well as the activity of mitochondrial adenosine triphosphatase (ATPase) were investigated. Three groups of sexually mature white New Zealand rabbits were used. Group 1 consisted of the normal non-infected rabbits, group 2 were experimentally infected with *Trypanosoma congolense* and group 3 were infected but given replacement doses of thyroxine. The infected animals (group 2) showed a rapid decline in both T3 and T4 but an increase in the T3/T4 ratio indicating differential production or clearance rates between the two hormones. The mitochondrial ATPase activity was found to be depressed in the infected group whereas there was no significant difference in the ATPase activity between the non-infected (group 1) and infected-treated animals (group 2). It is postulated that trypanosome induced hypothyroid status may play a role in the impairment of mitochondrial ATPase activity, a key enzyme in energy metabolism.