

## REDUCED SERUM TRIIODOTHYRONINE LEVEL IN ONCOCERCIASIS

Sir,

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Several bacterial and viral infections of both acute and chronic nature are reported to alter the serum thyroid hormone levels in man and experimental animals (2, 4, 5, 6). Such alterations include a reduction in serum triiodothyronine ( $T_3$ ) and either an increase or no change in thyroxine ( $T_4$ ). In all these conditions, serum thyrotrophin (TSH) levels were reported to be normal. Our laboratory has been engaged to work on thyroid status in several non-thyroidal illnesses commonly seen in Nigeria. The present report is one such observation made on oncocerciasis, one of the most serious of the filarial infections which is reported to affect over 20 million people in tropical countries (1). This infection is commonly seen in Northern Nigeria where the vector is the fly of the genus *Simulium* Bovis. There appears to be no report on the thyroid status of patients suffering from this infection. Therefore, we studied the thyroid functions in twelve patients aged between 20 and 40 years with oncocerciasis, attending to Ahmadu Bello University Teaching Hospital, Zaria, Northern Nigeria.

All of them had typical lesions of the disease such as subcutaneous nodules and varying degrees of blindness with evident microfilaria in the anterior chamber of the eye. They were afebrile and had no clinical evidence of thyroid disorder. Their serum  $T_4$ ,  $T_3$ ,  $T_3\%$  sponge uptake ( $T_3\%UT$ ), Free Thyroxine Index (FTI) and T.S.H. were estimated by Radio Immuno Assay using appropriate kits from Abbott Laboratories, West Germany. The thyroid parameters of the patients compared to healthy normals are given in Table I.

TABLE I : Serum thyroid hormones and thyrotrophin levels (Mean  $\pm$  SE) in Oncocerciasis patients compared with normals.

Group	$T_4$ $\mu$ g/100 ml	$T_3$ ng/100	T.S.H. $\mu$ Iu/ml	$T_3\%UT$	FTI
Oncocerciasis patients	8.5 $\pm$ 0.56 (12)	87 $\pm$ 7 (10)	2.08 $\pm$ 0.49 (12)	29 $\pm$ 0.96 (12)	2.45 $\pm$ 0.16 (12)
Normals	8.25 $\pm$ 0.21 (96)	127 $\pm$ 3 (67)	1.98 $\pm$ 0.15 (85)	27 $\pm$ 0.39 (57)	2.40 $\pm$ 0.08 (57)
Probability (c)	Not significant	$P < 0.001$	Not significant	Not significant	Not significant

Numbers in parenthesis represent sample size.



As reported in other systemic illness (3, 4, 5), these patients compared to normals had significantly reduced T3 levels ( $P < 0.001$ ) with no significant alterations in other parameters (Table I). In spite of low T3 levels, these patients are euthyroid as confirmed by the normal serum T4, T.S.H. and FTI levels. The possibility of low serum T3 levels due to reduced thyroid hormone binding proteins (TBP) is excluded as the T3%UT values are within normal limits. As reported in other illnesses (3, 5), the mechanism responsible for low serum T3 level in this infection may be due to altered peripheral metabolism of T4 in which T4 is converted to inactive 3, 3', 5', triiodothyronine (reverse T3) rather than active 3, 3', 5 triiodothyronine (T3). Such conversion may be considered as body's adaptive mechanism to limit hypercatabolism in infections (3). Thus, oncocerciasis has to be included in the growing list of non-thyroidal illnesses, the so-called "low T3 syndrome", characterised by lowered serum T3 levels in the absence of thyroid disease.

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