BACKGROUND

The burden of thyroid disease in the general population is enormous. These disorders are associated with cardiovascular complications which increase morbidity and mortality in affected patients. In Africans, thyroid autoimmunity is reported to be rare but there is evidence of increasing prevalence. Since undetected autoimmune thyroid disease carries considerable morbidity, this study sets out to determine the proportion of patients with goitre who have thyroid auto antibodies and the relationship, if any, between the presence of thyroid auto antibodies and the functional state of the thyroid gland.

METHODS

The study design was cross sectional and conducted over a twelve month period. It involved 150 subjects consisting of 100 subjects with goitre and 50 apparently healthy age and sex matched controls without goitre. The presence of thyroid dysfunction was assessed from clinical history, clinical examination and confirmed with biochemical tests. All subjects were also tested for the presence of both thyroid peroxidase and thyroglobulin antibodies. Thyroid ultrasound scan was done to estimate the size of the thyroid gland in subjects with goitre.
RESULTS

The mean (+SD) age for subjects with goitre and apparently healthy controls was 44.6 ± 13.8 years and 43.5 ± 16.7 years respectively (p = 0.681). Majority (47.3%) of subjects in the study population were in the age group 40-59 years. Twelve (12%) subjects with goitre were males while 88 (88%) were females giving a female to male ratio of 7.3:1. Of the healthy controls, 5 (10%) were males while 45 (90%) were females. There was no statistical difference in sex distribution of the subjects with goitre and the healthy controls (P = 0.716).

Fifty-seven percent of study subjects were euthyroid, 38% were hyperthyroid, while only 2% were hypothyroid. The overall prevalence of elevated thyroid peroxidase antibody (TPOAb) in the subjects with goitre was 35% and 8% in the controls (P < 0.001). Elevated thyroglobulin antibody (TgAb) level was found in 24% of subjects with goitre and 12% of controls (P = 0.083).

Elevated TPOAb level was found in 76.3% of subjects who were hyperthyroid, 7% of subjects who were euthyroid and 100% of subjects who were hypothyroid (P < 0.001). Elevated TgAb level was present in 36.8%, 15.8% and 50% of subjects with hyperthyroid, euthyroid, and hypothyroid goitre respectively (P = 0.068). The median concentrations of TPOAb in subjects with hypothyroid goitre, euthyroid...
goitre and hyperthyroid goitre were 273.1, 101.5 and 229.5 IU/ml respectively (P < 0.001) while the median levels of TgAb were 124.7, 64.2 and 113.9 IU/ml respectively (P = 0.893).

Of the subjects with goitre, elevated TPOAb was found in 31(35.2%) females and 4(33.3%) males (P = 0.897) while elevated TgAb was found in 22(25%) females and 2(16.7%) males (P = 0.526). The median levels of TPOAb in male and female subjects with goitre were 21.6 and 19.6 IU/ml respectively (P = 0.874) while the median levels of their TgAb were 101.7 IU/ml and 77.4 IU/ml respectively (P = 0.289).

The correlation between TPOAb and thyroid volume (r = -0.139, P = 0.167) and that of TgAb and thyroid volume (r = -0.119, P = 0.238) were not significant. A positive correlation was observed between TPOAb and erythrocyte sedimentation rate (r = 0.582, P < 0.001) and TgAb and erythrocyte sedimentation rate (r = 0.176, P = 0.08) but this was only statistically significant for thyroid peroxidase antibody.