EFFECT OF IONIZING RADIATION ON THE IMMUNE RESPONSE, AND SOME BIOCHEMICAL PARAMETERS IN EXPERIMENTAL ANIMALS.

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THESIS

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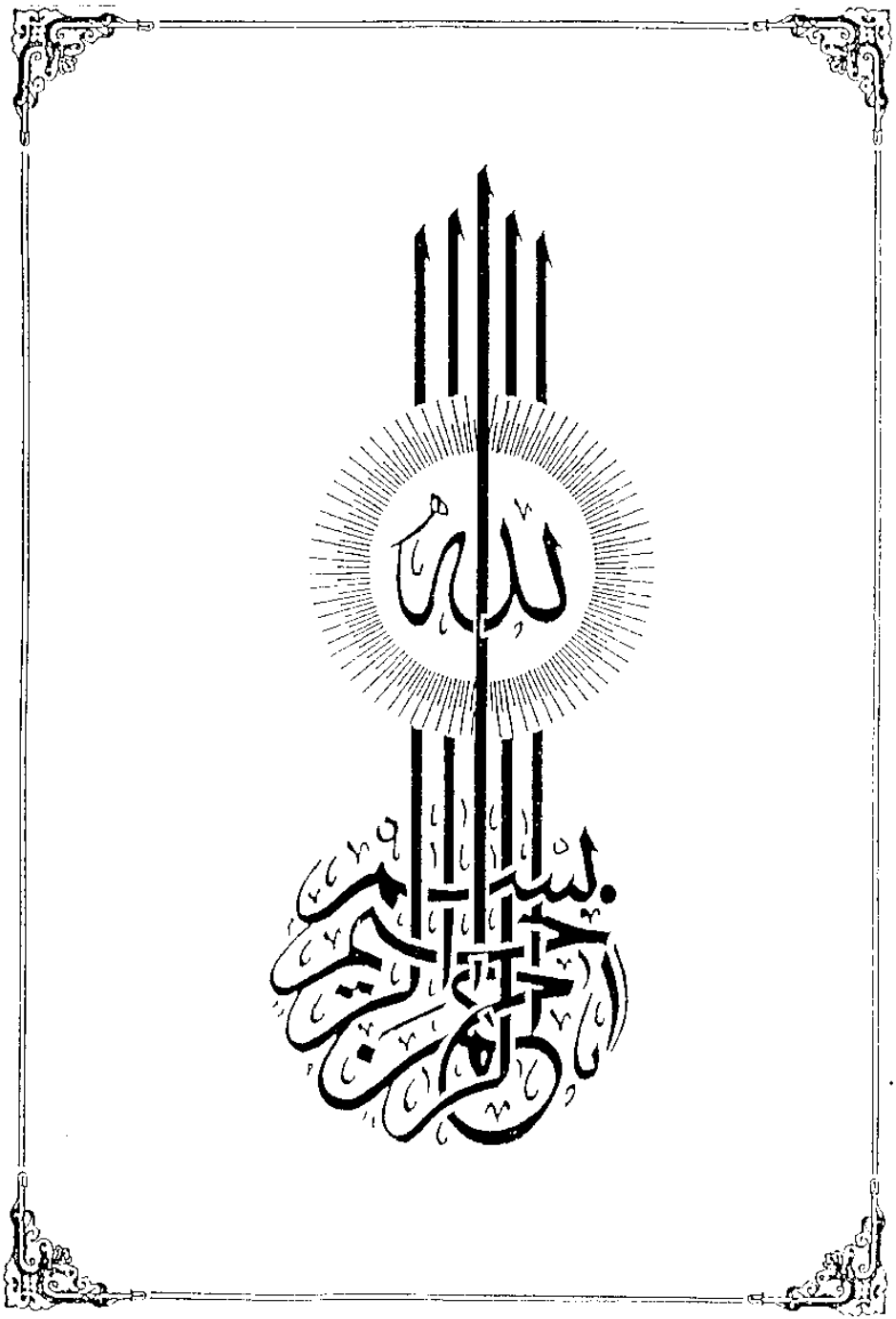
DEDICATION

TO MY BELOVED MOTHER



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With the advancement of modern technology, it becomes inevitable to avoid the use of nuclear technology as a contributing factor in the progress of modern civilization. In Egypt, it is already settled for the construction of some nuclear power plants allover the country. The wide usage of nuclear technology raises the question as regards to the effect of ionizing radiation, which might result from operational or experimental faults or due to exposure of workers dealing with radioisotopes on the different biological systems.

Numerous reports have been published on the effect of wide range of ionizing radiation doses on various biological systems including the immunity system. However, to the best of our knowledge no data are available on the effect of ionizing radiation on induced thyroid immunity and the present study might be considered the first investigation in this respect.Active thyroid immunity state was produced as a result of antigenic

stimulation with thyroglobulin, a case which simulate those occurring in thyroid autoimmune state. Thyroid autoantibodies have considerably high incidence in various thyroid disorders, non thyroid diseases such as diabetes, obesity and its prevelance increases in middle and old age subjects with no apparent endocrinopathy.

Therefore the main objectives of the study were:

- The effect of two doses of ionizing radiation;300 r and 600 r; on active thyroid immunity (thyroid antibodies as a result of antigenic stimulation).
- The use of various reliable and valid radiotracer techniques for the assessment of active thyroid immunity.
- To estimate the correlation between the various techniques used for such assessment which might form a forum for an intelligent approach of interpretation of the results.
- The effect of active thyroid immunity on some blood chemistry parameters (serum proteins, SGPT and cholesterol) and to compare the results with those under the condition of exposure to ionizing radiation.