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ABSTRACT:

Ageing of the endocrine system (endocrinosenescence) has been closely related to immunosenescence. Dehydroepiandrosterone sulphate (DHEAS), a steroid hormone produced by the adrenals with reported enhancing immunomodulatory properties, consistently decline during ageing in parallel to detrimental increase in peripheral glucocorticoids. We investigated here the adjuvant effects of DHEAS during intraperitoneal immunization to Mycobacterium tuberculosis heat shock protein 70 (mycHSP70) in old (24 months) as well as young (3 months) BALB/c mice. Both young and old mice had significantly higher Immunoglobulin G (IgG) levels following immunization. Young mice co-immunized with mycHSP70-DHEAS presented an early increase in specific IgG levels and showed increased Interferon-gamma production compared to old mice. Also, T cells of immunized young animals were consistently more resistant to the immunosuppressive effects of glucocorticoids and to DHEAS. DHEAS was not effective in modulating antigen-specific T-cell proliferation, Interleukin-2 production or percentage of recent activated T-cell subsets (CD4 + CD69 + and CD8 + CD69 +). Our data further indicate mycHSP70 as a putative good antigen in vaccine to tuberculosis. Our data also suggest that DHEAS produced adjuvant effects upon humoral and some cellular immune responses of young, but not old mice and indicate that immunization with DHEAS is capable of changing T-cell responses to steroids.