

Features of diagnostics and treatment of partial androgen deficiency of aging men

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A decrease in the pool of pluripotent stem cells among men after 40 years of age leads to a reduction in the intensity of processes for renewing tissues, including tissues of endocrinal organs. This reduction in intensity of processes of tissue renewal of endocrinal organs has a negative effect on these organs' function. The systemic character of the changes taking place in people of older age groups is proven by the development of atrophy and fibrous changes in other tissues and organs. In particular, among men, one can note atrophy of the testicles, which shows itself through the development of fibrosis of the basal membrane of tubular testicles, the reduction in the quantity of Leydig cells and other changes. Atrophy develops in other endocrine organs as well, for example one can see a reduction in the size of the hypophysis. Involution changes of the aging kidney are expressed by a reduction in its mass and volume and by progression of the accretion of connective-tissue components. After 40 years, there is sclerosis

of about 10% of the nephrons every ten years (1% per year). The overall mechanisms of regeneration, which depend on the quantity of the pool of pluripotent stem cells and the speed at which this pool decreases with age, determine the equal intensity of sclerosis of the majority of tissues among people of older age groups. The rate at which the general testosterone level decreases among aging men is 1% per year in accord to these values of the intensity of sclerosis of tissues. Men show a reduction in the amount of testosterone circulating in their blood. The latter phenomenon received the name partial androgen deficiency of aging men (PADAM) [5]. PADAM triggers abnormalities in the mechanisms of regulation in the system of the gonads–hypophysis–hypothalamus, and in particular, an increase in the activity of the hypophysis. A whole series of compensatory–adaptive reactions is formed in order to compensate for the lack of testosterone. This series of reactions affects endocrine, paracrine and autocrine levels