

HORMONES AND AGING

TRADITIONALLY, the aging process has been considered physiologic and unavoidable, but it may not be necessary to accept the grim stereotype of aging as an unalterable process of decline and loss.

Genetic factors, lifestyle, and societal investments in a safe and healthful environment are important aspects of successful aging.

In the current fast-paced lifestyle and social jetlag, the features of aging are appearing in early age groups, says a concerned Dr Deepak Chaturvedi, MD, Metabolic Physician Endocrinologist, Diabetologist, Bariatrician and Anti-aging and Hormones specialist at Ammaya Anti Aging & Wellness.

At one time, we were concerned about prolonging life and then our concerns shifted to prolonging productive life. Currently, the issue has become more difficult as the features

of aging are appearing prematurely. The age group of onset of diabetes mellitus, hypertension, ischemic heart disease, sexual dysfunction and other chronic diseases has gone down from 50-60 to 20-30 years.

The age of menopause and andropause has gone down in the last few decades. The phenomenon of subclinical hypothyroidism and subclinical Addison's disease are very well-understood now. Adult Onset Growth Hormone Deficiency has emerged as an independent clinical entity. Altogether, the features of hormonal imbalances and aging have so much in common that the role of hormonal imbalances bringing the aging prematurely cannot be ignored.

The hormones, neurotransmitters, inflammatory mediators and antioxidants play important roles as signalling mediators of the aging process. A state of inflammation, reduced levels of testosterone and Insulin-like Growth Factor 1 (IGF-1) combined with loss of motor neurons, have been linked to accelerated decline of muscle mass and strength in an aging individual.

Although aging does not simply result from a variety of hormone deficiency states, medical intervention in the processes of menopause, andropause, adrenopause, or somatopause may prevent or delay many aspects of the aging process. Since the hormones, inflammatory markers, and antioxidants are integrated into complex signalling networks, levels of individual biomarkers may well reflect adaptation within homeostatic feedback loops rather than true causative factors. Thus, the therapeutic strategy of single-molecule replacement may be ineffective or even counterproductive. The presence of such signalling networks and feedback loops may help explain why single-hormone replacement therapy for the problems of aging has demonstrated little benefit. The focus of research in this area is now on multiple-hormonal dysregulation. For example, taken one at a time, levels of testosterone, dehydroepiandrosterone (DHEAs), and IGF-1 do not predict mortality, but in combination, they are highly predictive of longevity.

As the medical fraternity is opening up to discuss aging as a clinical entity, the understanding of endocrinology of aging and the impact of various hormones on the aging process is mandatory. Hormones like the growth hormone, testosterone, estrogen, thyroid, cortisol and DHEA do play a pivotal role in the aging process and a better understanding and expertise in their manipulations is definitely a ray of hope in anti-aging medicine.

