Adrenal Asthenia

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Abstract

The terms 'adrenal asthenia', 'adrenal fatigue' and 'adrenal burnout', sometimes used in lay language, are not a part of the medical or endocrine lexicon. In this opinion piece, we explore the relevance of adrenal asthenia and describe how it can be used in different clinical situations, with varying connotations. Adrenal asthenia may refer to adrenocortical insufficiency, increased parasympathetic or reduced adrenergic tone, or fatigue due to excessive and continuous exposure to stress. It may be mediated by hypoglycaemia or dyselectrolytaemia. The term adrenal asthenia has important clinical and public health advantages.

Keywords: Adrenal, Addison's disease, adrenal insufficiency, person centred care, psychosocial aspects

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Introduction

The terms 'adrenal asthenia', 'adrenal fatigue' and 'adrenal burnout', sometimes used in lay language, are not a part of the medical or endocrine lexicon. In this opinion piece, we explore the relevance of adrenal asthenia and describe how it can be used in different clinical situations, with varying connotations.

Adrenal Insufficiency

The most 'scientific' use of adrenal asthenia is perhaps in the context of adrenal insufficiency. This is highlighted in case descriptions.[1] It is a useful phrase, as it clubs the etiology (adrenal) with symptom (asthenia). It creates a vivid picture of the person's problem, as well as the therapist's target. Adrenal asthenia may not be an ideal way to describe Addisonian crisis, however. These words are more suited to chronic, indolent disease than an acute, life-threatening attack.

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Adrenal asthenia can be an apt choice to describe adrenal medullary hypofunction as well. The adrenal medulla secretes the catecholamines adrenaline and noradrenaline, which are necessary for stress management. A relatively higher vagal tone, and/or low sympathetic drive can be described as adrenal asthenia. It may be more relevant to use the term 'adrenergic asthenia', as dopamine, a catecholamine secreted predominantly in the brain, is more strongly associated with mood. Existence of dopaminergic pathways in the brain is a proof of this phenomena.[2]

Sexual Asthenia

Sexual asthenia may occur due to diminished secretion of dehydroepiandrosterone (DHEA) from the zona reticularis of the adrenal cortex. This is especially common in post-menopausal women and those with autoimmune disease.[3] Adrenal asthenia may be used as a euphemism for this distressing condition. This may or may not be related to testosterone/estrogen deficiency, and should be viewed as an independent illness.

Adrenal Fatigue and Burnout

Modern lifestyle places relentless demands upon the adrenal gland. Both the cortex and medulla have to work harder in order to meet the requirements of survival.[4] While these glands, and their hormones, are an adaptive mechanism to tackle stress, continual and concerted stimulation may sometimes lead to 'adrenal fatigue'. This, too is a term that is frequently used by lay commentators, but not by endocrinologists.[5]

Continued fatigue, without opportunity for rest, may lead to adrenal burnout. The term fatigue conveys a temporary or self-limiting challenge, while burnout implies permanent or irreversible affliction. The term burnout may be used to describe persons with adrenal haemorrhage and the resultant hypoadrenalism, that it causes.

In the psychosocial context, adrenal asthenia or fatigue can be used to describe a situation where a person decides to withdraw from a chronic stressful situation, citing inability to handle pressure. Examples include leaving a highly paid, but demanding job, or walking out of a toxic relationship. This adrenal burnout is mediated at both cortical and medullary levels.

Pathophysiology

Perhaps a phenomenon similar to tachyphylaxis[6] occurs, which prevents excessive cortisol and/or catecholamines from having their desired "fight" effects. It is also possible that a mental or cognitive reset occurs, converting a hitherto successful "fight" response to a "flight" or "fright" one. A corollary can be drawn with dopamine: episodic enhancement allows migratory birds to travel long distances, but sustained stimulation leads to dysglycaemia in persons at risk of diabetes.[7]

Adrenal asthenia may be mediated by hypoglycaemia and hyponatraemia. Both of these are cardinal manifestations of adrenal insufficiency, and can cause weakness.[8] There may be an unrecognized element of hidden hunger as well. Adrenal dysfunction is associated with reduced appetite which can impair micronutrient (vitamin, mineral) intake. Some adrenal diseases may co-occur with malabsorption syndromes, which can cause protein-energy and micro-malnutrition.

Public Health Implications

There are significant clinical implications of the term 'adrenal asthenia'. The term is a highly person-centred one, which all persons can understand easily, unlike Addison's disease. It is also non-threatening, as opposed to adrenal crisis. The use of adrenal asthenia is socially appropriate in all cultures, as compared to other description such as sexual dysfunction, mid-life or hypogonadism. The term focusses attention on the person's complaints, concerns and challenges, rather than complicated latinesque or eponymous terminology, and suggests that these can be overcome with appropriate care.

At the same time, usage of this terminology has significant potential for public health. The public can be sensitized to the need for sustainable stress management as a part of healthy lifestyle. Attention can also be focussed on the various components of adrenal health: Mood/mental/cognitive/emotional, Metabolic/vascular, Malassimilative/social, and Monetary. These four Ms reflect the biopsychosocial and biopsychosocial-environmental models of health.

Clinical Implications

To be recognized as a disease, any condition must have objective criteria for diagnosis, and clear-cut targets for treatment. There is consensus regarding the classification, screening, confirmation and management of adrenal insufficiency.[8] There is no agreement, however, on the existence of adrenal fatigue or burnout secondary to exposure to excessive stress.

The koala bear stress syndrome refers to impaired adrenal responsiveness in the critically ill persons. Also known as critical illness- related corticosteroid insufficiency (CIRCI), this is associated with structural and functional impairment of the adrenal cortex.[9] While this syndrome is acknowledged by clinicians and researchers, a similar phenomenon in the outdoor clinic is often not appreciated. Table proposes symptoms, signs and surrogate laboratory markers which may lead one to suspect adrenal fatigue in affected individuals.

Table-1: Red flags of adrenal asthenia.

Symptoms
● PSYCHOSOCIAL
▪ High stress levels for long period of time
▪ Lack of motivation
● PHYSICAL
▪ Easy fatiguability
▪ Difficult to control diabetes/hypertension
▪ Loss of libido
● Signs
▪ Change in weight
▪ Change in complexion
▪ Chang in mood
● Surrogate labs
▪ Dyslectrolytaemia
▪ Dysglycaemia

Table-2: The four Ms of adrenal asthenia.

▪ High stress levels for long period of time
▪ Mood/mental/cognitive/emotional dysfunction
▪ Metabolic/vascular ill health
▪ Malassimilation/social disinterest
▪ Monetary impact

The treatment should be decided according to the chief complaint, its etiology, and its impact on quality of life. Autonomic balancing through meditation and relaxation exercise, use of appropriate neurotropic vitamins, and restoration of adrenal health are means of treatment.

Usage of the term adrenal asthenia may lead to its misuse. Over diagnosis and overlabelling of adrenal disease may occur, thus working against the principle of quaternary prevention.[10] On the contrary, popularization of the phrase as a scapegoat for various ails and travails may lead to incomplete or inappropriate medical evaluation. Significant psychosomatic, infectious or autoimmune morbidity may be missed in some cases. Delayed diagnosis may lead to delayed treatment, and this may cause avoidable complications.

Take Home Message

Keeping these pros and cons in mind, it makes good clinical sense, and good public health practice, to ensure discussion and dialogue on adrenal asthenia. This will help promote preventive as well as curative care, and ensure better endocrine, and comprehensive health for all.

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