

Role of Ashwagandha in Management of stress vis InnoVision Ashwagandha Capsule & Tablet

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Abstract: According to various studies stress is the key factor for most of the psychological and endocrine disorders. Due to the stress, disorders like diabetes mellitus, hypothyroidism, obesity, hypertension, ulcerative colitis, gastric ulcers are on rise in today's population. The medications for these are available but they come with several side effects. So the new age is finding solution in Ayurveda a health system of India for thousands of years. Ayurveda describes many herbs with adaptogenic properties. The adaptogens improve the response to stress and help the body to adapt by normalizing physiological processes in times of increased stress. Ashwagandha is most popular among them.

Key Words: Ayurveda , Ashwagandha, Stress, Plant, Clinical study.

INTRODUCTION:

Human society has more evolved and become more demanding in many centuries but our physiological mechanism to cope up with adversities of life and nature has not evolved appreciably.¹ hence our physiological response to rapid change in lifestyle, social pressures, and information overload creates havoc in our physiological system resulting in stress. Stress is a reaction to a stimulus that disturbs our physical or mental equilibrium. Acute stress can be exciting; it keeps person active & alert. But chronic stress can have detrimental effects on health.² Stress leads to activation of limbic–hypothalamo–pituitary–adrenal axis (LHPA) and secretion of stress hormones like corticotropin-releasing hormone (CRH), adrenocorticotrophic hormone, and cortisol.³ Activation of stress hormones further results in fear and anxiety in chronic stages.⁴

Stress becomes dangerous when it interferes with ability to live a normal life over an extended period, causing irritability and lack of concentration. Stress is not an illness itself, but it can cause serious physical and psychological illness if it isn't addressed. It's important to recognize the symptoms of stress early. The facets of stress are essentially limitless, however broad categories include physical exertion, emotional upset, persistent psychological pressure, existential crisis and residual effect of emotional trauma. Recognizing the signs and symptoms of stress will help to figure out ways of coping.⁵ Physical and behavioral adaptation responses are necessary to maintain the homeostasis from disturbing stressors. Throughout human history there have been searches for antidotes for the symptom of anxiety and stress. Since the development of first benzodiazepine, more than 2000 related compounds have been synthesized, but few of them have been found clinically useful. All these carry abuse potential and are associated with physical dependence and withdrawal.⁶ This provides impetus in search for newer, effective and drugs without adverse effects.

Herbal products have played a significant role in management of neuropsychiatric disorders with their adaptogenic properties. These adaptogens appears to induce a state of nonspecific resistance enabling to counteract and adapt to different stressors. It has been documented that several plants possess adaptogenic properties⁷ ashwagandha is prime among them.

ETHNOPHARMACOLOGIAL ASPECTS OF ASHWAGANDHA:

Ayurveda, the traditional system of medicine practiced in India can be traced back to 6000 BC, Ashwagandha, one of the most powerful herbs in Ayurveda, has been used since ancient times for a wide variety of conditions, and is most well-known for its restorative benefits as a Rasayana. The root of Ashwagandha is regarded as tonic, aphrodisiac, narcotic, diuretic, anthelmintic, astringent, thermogenic

and stimulant. In Sanskrit Ashwagandha means “the smell of a horse,” indicating that the herb imparts the vigor and strength of a stallion, and has traditionally been prescribed to help people strengthen their immune system after an illness.⁸ Ashwagandha is frequently referred to as “Indian ginseng” because of its rejuvenating properties.

PHYTOCEUTICAL COMPOSITIONL:

A review of literature reveals the presence of various chemical constituents in the different parts of the plant.

The roots are reported to contain alkaloids, amino acids, steroids, volatile oil, starch, reducing sugars, glycosides, hentriacontane, dulcitol, withanol. Basic alkaloids include tropine, pseudotropine, anaferine, isopelletierine, withananine, withananine, pseudo-withanine, somnine, somniferine, somniferine. Other alkaloids include withanine, withasomnine, and visamine. Withanine is sedative and hypnotic.⁹

The biologically active chemical constituents are alkaloids (isopelletierine, anaferine), steroidal lactones (withanolides, withaferins), saponins containing an additional acyl group (sitoindoside VII and VIII), and withanolides with a glucose at carbon 27 (sitoindoside IX and X). Withaferin A, a steroidal lactone is the most important withanolide isolated from the extract of the dried roots of *Withania somnifera*.¹⁰

WITHANALOIDES AND ITS BENEFICIAL ACTIVITIES:

Withanolides are a group of C28 steroidal lactones isolated from various solanaceous plants. Withanolides and their derivatives are found to possess very interesting biological activities especially the antistress, Anxiolytic, antitumour, adaptogenic, immunomodulating, and antioxidant, activities.

InnoVision’s Ashwagandha capsule is standardized to 300 mg of Withanolides. These root extract of Ashwagandha has Antistress, Anxiolytic and antioxidant activities which are supported by following studies. Being a powerful adaptogen, it enhances the body’s resilience to stress. These improve the body’s defense against disease by improving the cell-mediated immunity. It also possesses potent antioxidant properties that help protect against cellular damage caused by free radicals.

1. Antistress effects of Ashwagandha:

Glycosides of WS (sitoindosides VII and VIII, 50 to 100 mg/kg) exhibited significant antistress activity in forced swimming induced immobility in mice, restraint stress induced gastric ulcers, auto-analgesia, restraint stress effect on thermic response of morphine, and morphine-induced toxicity in animal models.¹¹ The alcohol extract of WS (100 mg/kg, twice daily orally on day 1, 4 or 7) reduced stress-induced increases in blood urea nitrogen levels, blood lactic acid, and adrenal hypertrophy, but did not affect changes in thymus weight and hyperglycemia in rats.⁷ Ashwagandha reversed the cold swimming-induced increases in plasma corticosterone, phagocytic index, and avidity index to control levels. *Withania somnifera* root powder (100 mg/kg orally as an aqueous suspension daily for seven days) given before the swimming test in water at 10°C also increased total swimming time, indicating better stress tolerance in rats.¹²

2. Anxiolytic action of Ashwagandha:

In an animal study assessing the anxiolytic and antidepressant actions of ashwagandha compared to commonly prescribed pharmaceuticals, an extract of the root was administered orally to rats once daily for five days. The results were compared to a group administered the benzodiazepine lorazepam for anxiolytic activity, and the tricyclic antidepressant imipramine for antidepressant investigation.

Both the ashwagandha group and the lorazepam group demonstrated reduced brain levels of a marker of clinical anxiety. Ashwagandha also exhibited an antidepressant effect comparable to that induced by imipramine in the forced swim-induced “behavioral despair” and “learned helplessness” tests. Other

similar studies confirm these results, lending support to the use of ashwagandha as an antistress adaptogen.¹³

Two new glycowithanolides, sitoindoside IX (1) & sitoindoside X (2), isolated from *Withania somnifera* Dunal, were evaluated for their immunomodulatory & CNS effects like antistress, memory & learning in laboratory animals. Both these compounds (50- 200mg/kg) produced significant anti stress activity in albino mice & rats, augmented learning acquisition & memory retention in both young & old rats.¹⁴

3. Antioxidant effect:

The brain and nervous system are relatively more susceptible to free radical damage than other tissues because they are rich in lipids and iron, Free radical damage of nervous tissue may contribute to neuronal loss in cerebral ischemia and may be involved in normal aging and neurodegenerative diseases.¹⁵

In a study Active glycowithanolides of WS (10 or 20 mg/kg intraperitoneally) were given once daily for 21 days to groups of six rats. Dose-related increases in all enzymes were observed. This increases was comparable to those seen with deprenyl (a known antioxidant) administration (2 g/kg/ day intraperitoneally).¹⁶

CLINICAL STUDIES ON ASHWAGANDHA:

Double blind placebo control study in patients with ICD-10 anxiety disorders, 6 weeks treatment with ethanolic extract of *Withania somnifera* showed anxiolytic activity over placebo.¹⁷ In one of the study patients were assigned with *Withania somnifera* extract (125mg QD, 125mg BID or 250mg BID) or placebo groups. The results showed on days 0 & 60, revealed the *Withania somnifera* extract 125mg QD group decreased significantly more than placebo for mean mHAM-A score, serum cortisol, serum C reactive protein, pulse rate & blood pressure & increased significantly for mean serum DHEAS & hemoglobin. Participants & dropouts reported no adverse effects. Therefore it provides evidence that the consumption of *Withania somnifera* extract significantly reduces experiential & biochemical indicators of stress without adverse effects.¹⁸ A study conducted in University of Texas Health Science Centre showed extracts of the shrub has activity that was similar to GABA which could explain why the plant is effective in reducing anxiety & stress. Another study shows *Withania somnifera* that the plant can enhance memory which also reduced anxiety & depression in animals.¹⁹

This evidence coupled with non toxicity of the plant and its extracts makes ashwagandha as an excellent adaptogenic herb in management of stress.

ASHWAGANDHA SIDE EFFECTS:

Ashwagandha does not have any significant side effects reported in the medical literature. Safety in pregnancy has not been fully established for Ashwagandha.

CONCLUSION:

The results from this review are quite promising and support the use of ashwagandha for anxiety, cognitive and neurological disorders. Although Ashwagandha is a plant used in the ancient system of Indian medicine, the available scientific data support the conclusion that Ashwagandha is a real potent regenerative tonic (Rasayana of Ayurveda),

InnoVision's Ashwagandha Capsule/Tablet is standardized formulation that contains extracts standardized to withanolides prepared from the finest quality of Ashwagandha at the unit which is approved by US FSA Dietary supplement GMP (NSF GMP). The extractive value standardized not less than 1.5% of the total value of its addition. The purest form of withanolides which present in the Ashwagandha tablet/capsules ensure the highest efficacy in usage extending all its holistic approach as mentioned or referred in the various peer reviewed journals, and useful on all conditions with special emphasis on anti-stress, adaptogenic, and aphrodisiac activities.

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