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PASSIONFLOWER EXTRACT AND ITS USAGE IN MEDICINE

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Annotation
Herbal medicines include a range of pharmacologically active compounds: in some cases, it is not well understood which ingredients are important for a therapeutic effect. The supporters of herbal medicine believe that isolated ingredients in the majority of cases have weaker clinical effects than whole plant extract, a claim that would obviously require proof in each case. Generalizations about the efficacy of herbal medicines are clearly not possible. Each one needs systematic research including a variety of animal studies and also randomized clinical trials. In this article we focus on Passiflora incarnat a and Salvia officinalis.

Keywords: passionflower**;** Passiflora incarnata; flavonoid; emotion, Evidence based Medicine, Herbal Medicine, Mental health, Passiflora incarnate, Salvia officinalis.

Introduction

Passionflower (Passiflora incarnata) is a type of over 520 types of Passiflora family plants. As its flower has a similar shape to a clock, this perennial vine plant. Passionflower symbolizes “holy love” in the language of flowers. Its place of origin is tropical and subtropical areas of North, South and Central America. The passionflower was used by indigenous people as a sedative agent. It was brought to Europe by Spanish people and became a popular sedative agent effective for treating anxiety and insomnia. Currently, it is approved as a medicine (medicinal herb) in Egypt, France, Germany, England and the United States.1） In Japan, the fruit, stem, leaves and flowers of passionflower are classified into the groups of non-pharmaceutical plants (not regarded as medicine) in the Food and Drug Classification List as far as their pharmaceutical effect is not claimed. Although many clinical trials of passionflower on anxiety and relieve insomnia have been carried out, the action mechanism has not been well understood. Oryza Oil & Fat Chemical Co., Ltd. studied the effect of passionflower on the human biological clock (circadian rhythm; life rhythm). As a result, we found that passionflower extract and its components have an effect to enhance the expression of clock genes (genes controlling the circadian rhythm). Passionflower extract can be used in the foods for improving the life rhythm and quality of sleep, because it regulates our biological clock. Passionflower extract is a highly effective product to help people who care for a healthy condition both day and night. Passionflower (Passiflora incarnata) Passionflower is a woody, hairy,

climbing vine. The medicinal parts are the whole or cut dried herb and the fresh aerial parts. The axillary pedicle grows up to 8 cm and bears 1 flower. The flowers are androgynous and rayed with a diameter of 5 to 9 cm and have an involucre. The 5 sepals are green on the outside, white on the inside and tough. The 5 petals are white to pale red. The passionflower is a perennial vine on a strong stem reaching up to about 10 m in length. The vine is initially angular, later, gray and rounded with longitudinally striated bark. The plant contains flavonoids (up to 2.5%), cyanogenic glycosides and volatile oil (trace) .

BACKGROUND

Several species of Passiflora have anti - anxiety effects

P. incarnata has been most widely studied in this context. Chrysin, a Passiflora extract, was shown to decrease anxiety -like behaviors in rats. In a double - blind randomized study comparing the effect of P. incarnata extract 45 drops/day and oxazepam 30 mg/day on 36 patients with generalized anxiety disorder both drugs were equally effective in treating anixety. P. incarnata showed a delayed onset of action compared to oxazepam, whereas more impairment of job performance was seen with oxazepam. A combination of Ballota, Passiflora, Valeriana, Crataegus, Cola, and Paullinia were used to treat adjustment disorder with anxious mood in a multi -center double -blind placebo controlled study. By week four, 43% of patients in the herbal drug group and 25% in the placebo group achieved a score of less than 10 P. incarnata not only was used to treat generalized anxiety, but also was used as a calming agent before surgery. In a study, sixty patients randomly received oral P. incarnata (500 mg) or placebo, 90 minutes before outpatient surgery. Patients in the Passiflora group showed significantly lower anxiety scores than the control group. No significant difference was observed in psychological measures and psychomotor function between the two groups.

Dementia Sage inhibits cholinesterase, exerts anti - inflammatory and anti -oxidative effects, and improves mood and cognition in animals and healthy human subjects . Sage showed neuroprotective effect in amyloid -beta peptide (Abeta) -induced toxicity in rat pheochromocytoma (PC12) cells. This herb and its active constituent, rosmarinic acid exerted beneficial effects against formation of oxygen free radicals, lipid peroxidation, DNA damage, molecules of apoptosis pathway, p38 mitogen - activated protein kinase, and tau hyperphosphorylation induced by Abeta in PC12. In a 4 -month randomized double -blind placebo -controlled study, efficacy and tolerability of sage extract (60 drops/day) was compared to placebo in patients with mild to moderate Alzheimer's disease. Patients in the sage group showed a significantly better outcome on cognitive performance and less agitation than the placebo group.

Adverse event and toxicity The short and medium -term use of sage have been generally associated with good tolerability profile. Sage like several other aromatic plants contains a substance called thujone which potentially can cause severe nervous system symptoms such as convulsion and hallucination. Therefore, an acceptable daily intake of 0.11 mg/kg bw/day of thujone has been suggested (2 - 20 cups of sage tea) to avoid side effects. Tonic clonic seizure following accidental use of sage oil has been reported in children. A case of allergic contact dermatitis due to use of S. officinalis extract has also been reported.

Preclinical studies of passionflower extract (PFE) have demonstrated psychotropic effects i n mouse behavioral models. Administration of PFE (approximately 400 mg/kg) to mice

increased momentum in the unfamiliar environment test [8] and the elevated plus maze test [9].

It has been suggested that GABA-sensitive neurons [10, 11] and an opioidergic mechanism

[10] are involved in the anxiolytic effect of PFE, especially during long-term administration.

On the other hand, we previously found that the same PFE material as this study enhances the

expression of clock genes such as period (Per) 2 in mouse liver and fibroblasts [12]. Based on

these reports, we considered that PFE might influence sleep and emotions in humans, thus we

conducted a clinical trial in healthy Japanese adults to investigate this possibility.

Effect of Passionflower Extract on Circadian Rhythm （1） Circadian rhythm (biological clock) and clock genes. The circadian rhythm, also called biological clock, is a physiological phenomenon that changes in approximately 24 hour cycle (about one day). Almost all organisms have this rhythm, which controls physiological activities including sleeping, awakening, digestion, absorption, metabolism, hormonal secretion and the regulation of blood pressure and body temperature. The disruption of circadian rhythm is associated with a variety of diseases including the impairment of endocrine function, metabolic homeostasis and autonomic nerve system. It is believed that abnormal circadian rhythm causes jet lag, sleeping disorder and lifestyle-related diseases such as obesity, high blood pressure, diabetes and mental illness. Circadian rhythm is affected not just by external factors (ex. light, temperature, diet and stress) but by internal factors such as aging. The aging process leads to major alterations in rhythms of the circadian clock. Elderly people have a faster circadian rhythm because the amplitude is smaller than younger people2). As a result, their physical condition does not alter during the day or at night and then their life rhythm (biological clock) is disrupted. Genes that regulates the circadian

rhythm are called “clock genes”. Per and Cry, of which expression increases during daytime (active period) and Bmal and Clock, of which expression increases at night (rest period) are regarded as the main indicator to assess the pattern of circadian rhythm.

Conclusion

The article reviewed the use of passionflower and sage in mental health setting. Passionflower has shown promising effects for the treatment of sleep and anxiety disorders. It has also been successfully used as a calming agent prior to surgery and as adjunct to clonidine in the treatment of substance withdrawal. Sage improved symptoms of dementia in one study, even though the study needs replication. Although additional research is needed for all of the herbs, the risks are generally low enough that they may be useful for patients with mild symptoms, those who cannot tolerate prescription medications, or individuals who prefer herbal to traditional remedies.

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