



## **5-HTP Administration as Preferential Supporting to Treatment of Morbid Romantic Jealousy**

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### **Author's contribution**

*The sole author designed, analyzed, interpreted and prepared the manuscript.*

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### **ABSTRACT**

The use of 5-HTP could reduce the problems faced by patients who report morbid jealousy problems that significantly interfere in their loving relationship and quality of life established. However, further studies are necessary to verify this hypothesis that have been identified, in my case studies, to emit a recommendation on dosage and more comments on interactions and side effects would be very appropriate in further studies.

*Keywords: L-5-hydroxytryptophan; serotonin; jealousy; othello syndrome; quality of life.*

### **1. INTRODUCTION**

The theme of loving relationships is one of the most important areas (and often problematic) of people's lives and can provide one of the richest emotional rewards in adulthood. It should be

evident that for many people, relationships are considered as the main source for achieving happiness and satisfaction [1,2]. In fact, the love is one of the most overwhelming of all affective states and represents a human cross-cultural universal [3,4]. Unfortunately, this importance is

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better perceived when the ratio is not satisfactory and/or is threatened by a variety of situations, for example, those related to the difficulties associated with the romantic jealousy.

The romantic jealousy may be understood as a normal and adaptive reaction to a threat coming from a rival to an important relationship (real or imaginary) [5]. Many researchers have studied the factors that can contribute to a loving relationship remains stable and has a good quality for both partners [1,5-10]. Two of the biggest worries that people have regarding love relationships are the morbid jealousy and infidelity that can considerate resources of romantic stress like as studied previously for many researchers (e.g. [11]) that in their study suggest that direct modulation of the serotonergic system may have use for the treatment of psychological suffering associated with unreciprocated romantic love. Morbid jealousy is an important problem in psychiatry, which involves some risks and much distress, and may occur in many mental disorders. However, the morbid jealousy occupies ambiguous and marginal position in contemporary psychiatry, prevailing pessimism about the therapeutic aspects. For example, when jealousy goes to the extreme, it can confer tremendous economic and psychological costs on individuals and society, leading to aggressive behaviors such as domestic violence, suicides, and murders [12]. Phenomenologically, the morbid jealousy can manifest in different ways, such as an obsessional, overvalued or delusional idea of infidelity [13].

The concept of morbid (also known by the literature as pathological jealousy or "Othello syndrome") comprises various exaggerated emotions (disproportionate to the stimulus that produced them), irrational and disturbing thoughts and unacceptable behavior or bizarre. This concept would involve a lot of fear of losing your partner to a rival, distrust excessive and unsubstantiated, causing significant impairment in personal/interpersonal functioning. Some authors (e.g. [14]) consider that the belief in the infidelity is an unnecessary criterion, being crucial the fear of loss of the other, or busy affective space.

It is important to note that the base of the morbid jealousy would be in its irrationality, not in excessiveness [15]. Problem important, you can get to the psychiatrist as a symptom in different forms of presentation, related to both personality

disorders as mental illnesses. Since the early 1970s, authors suggested the relationship between morbid jealousy and obsessive-compulsive disorder (OCD), with ordinary therapeutic approaches [16-25].

The contemporary living standard has imposed upon society a situation of chronic increased of resources of stress as problems with morbid jealousy and loving infidelity, ultimately interfering with their quality of life. The contemporary living also interferes with the supply and uptake of tryptophan sources, as stated earlier, essential for the maintenance of the fundamental organic activities of human life. And this chronic concern affects women and men of different ways. With psychotherapy, it is usually possible to determine the cause of these circumstances and effects and work through the pain caused by the stressors. Alternatively, in some few studies, it is possible for individuals to dampen their stressors of romantic relationships by providing their bodies with natural substances that can have a positive effect on the biochemical processes that occur. However, no studies conducted relating the effects of 5-hydroxytryptophan (5-HTP) to decrease/control the synthons of morbid jealousy that patients referred for medical and psychological practices. This article discusses that the use of 5-HTP might reduce the problems faced by patients who report morbid jealousy problems that significantly interfere in your loving relationship and quality of life.

## 2. HYPOTHESES

Although I have never conducted properly a research on the subject, in over 2500 psychotherapeutic cases I have noticed that people who manifest morbid jealousy do not actively ingest sources of tryptophan, through data obtained in their clinical anamneses. Parallely to this observation, I have noticed that people who come to my office and consume frequently sources of tryptophan, on average 3 times a week, do not manifest symptoms of morbid jealousy.

Although I never had conducted a study to verify if could be established a statistically and scientificly correlation about the consumption of tryptophan sources and the reduction of cases of morbid jealousy *per se*, it is known (e.g. [26]) that the active absorption of sources of tryptophan can help reduce anxiety in humans. In addition to these observations, I noticed that the use of 5-

HTP by my patients who wanted to lose weight and not practice physical activity or by high performance athletes, who also used of 5-HTP, do not manifest symptoms of morbid romantic jealousy. Such insights have made me research more about what is tryptophan and the best bioavailable sources of this amino acid and also, on the serotonergic action involved in the processes of pathological jealousy. Then, through some observations that I made:

- Focusing on the data brought and shared in anamnesis of the patients about the consumption of tryptophan sources by them, because helped them to self-regulate themselves emotionally, above all, as regards the manifestation of morbid romantic jealousy;
- As well as having the knowledge of the medication prescribed by the doctors that my patients went to (in order to reduce their anxiety symptoms), and
- Having the knowledge of the patients who self-medicated with 5-HTP, for aesthetic motives, to potentiate a decrease in appetite and, consequently, a more rapid weight loss;

I was able to establish a hypothesis starting from some premises. My first hypothesis is that food and supplements containing a certain amount of tryptophan, (depending on age, height and weight of the individuals taking them), can considerably help them to reduce their problems with the symptoms of morbid romantic jealousy caused by anxiety. Above all, to people who do not use such foods and supplements, them might helped them to reduce the symptoms of morbid romantic jealousy if was consumed such foods and supplements sources of tryptophan. And my second hypothesis is the use of 5-HTP could reduce the problems faced by patients who report morbid jealousy problems that significantly interfere in their loving relationship and quality of life established.

Taking into account also that:

- That the human organism does not produce tryptophan, in such a way that, although human physiology lacks this amino acid to produce serotonin and, consequently wellbeing, consumption of tryptophan sources;
- Contemporary society often, due to its *modus operandi*, does not consume

sufficiently differentiated foods, especially those that are rich in tryptophan sources;

- Some of these foods are rejected either because of their taste or because they are considered highly energetic and thus are actively avoided by people who want to lose weight.

From these premises previously described I could elaborate my hypothesis, that is, the use of 5-HTP, as supporting to treatment for jealousy cases related to anxiety, might reduce the problems faced by patients who report morbid romantic jealousy that significantly interfere in your established relationship and quality of life as well as taking into account, as we shall see, below, that:

- Would act faster (increased bioavailability and efficiency) that the intake of foods that are tryptophan sources;
- Reduces the romantic jealousy due to the increase of serotonin that will be sent to the brain and consequent anxiolytic effect of this process;
- Have fewer side effects than anxiolytics drugs commonly prescribed for such complaints;
- Is an easier alternative to be accessed by people;
- Has a lower cost than the pharmacopoeia commonly prescribed for such cases;
- Can be used as a first-choice treatment because it is less invasive and causes fewer side effects than other psychotropic alternatives.

### 3. The L-5-HYDROXYTRYPTOPHAN AND THE ROLE OF SEROTONIN

Short for 5-hydroxy-L-tryptophan, the 5-hydroxytryptophan (5-HTP), is an aromatic amino acid naturally produced by the body from the essential amino acid L-tryptophan. Specifically, it's a substance that links the amino acid tryptophan to the chemical messenger serotonin. 5-HTP is found in the seeds of *Griffonia simplicifolia*, a natural plant from West Africa (Ghana, Ivory Coast and Togo).

Therapeutic use of 5-HTP bypasses the conversion of L-tryptophan into 5-HTP by the enzyme tryptophan hydroxylase, which is the rate limiting step in the synthesis of serotonin. It's a natural serotonin precursor. Serotonin is a well-known contributor to feelings of well-being, and consequently has been a primary target. The

serotonin present in the body has many functions, such as controlling the release of some hormones, regulating the circadian rhythm (sleep cycle and awakening the individual, when converted into melatonin), sleep and appetite [27]. The deficiency of 5-HTP involves reduction of serotonin and in turn leads to depression, lack of appetite, obsessive compulsive disorders, social phobia, pre-menstrual syndrome [13]. It is also involved in autism, anxiety, bulimia, panic, migraine, schizophrenia and extreme violence [28,29].

Tryptophan, which our bodies can't make but we do get from many foods, quickly turns to 5-HTP in the brain. It is a nutrient found in high protein foods such as meat, fish, turkey and dairy products. 5-HTP, in turn, rapidly becomes serotonin, a compound that plays a large role in controlling mood, appetite and sleep cycles. Because extra tryptophan in our diets leads to extra serotonin in our brains, tryptophan supplements became extremely popular, in the 1980s, as a natural remedy for insomnia, obesity and depression. Nowadays, among other pharmacotherapies, 5-HTP has been used to treat insomnia, migraines, fibromyalgia, attention deficit disorder, cerebellar ataxia and Parkinson's disease [30]. For example, 5-HTP definitely plays an antidepressant role in patients of depression. The antidepressant effect is apparent in all degrees of depression including severely depressed. The minimal effective dose of 5-HTP to produce antidepressant effect is 150 mg/day.

However, 5-HTP is not to be used concomitantly some substances, for example: (1) If you combine 5-HTP with many antidepressants drugs (including tricyclics, monoamine oxidase inhibitors, selective serotonin reuptake inhibitors such as Prozac and other serotonin agonists), you run a high risk of harmful side effects; (2) Taking 5-HTP along with carbidopa (used with L-dopa to treat Parkinson's disease) may cause hardening of the skin similar to scleroderma; (3) Taking 5-HTP with serotonin antagonists reduces the effectiveness of these drugs and increases your risk of side effects.

Tryptophan depletion is widely used paradigm to study the role of the serotonergic system in the pathophysiology and treatment of depression, anxiety disorders [31-33]. There are several reports that plasma tryptophan is significantly lower in patients with major depression than in normal controls or in patients with only minor symptoms of depression [34,35]. In humans, several studies have shown that reducing

serotonin synthesis (by depriving the brain of tryptophan) can induce depression within hours [31,36].

The most common adverse effects of 5-HTP are gastrointestinal and include nausea, vomiting and diarrhea [37]. Less commonly, headache, insomnia and palpitation can occur. Intravenous administration of 200–300 mg of 5-HTP can induce confusion, memory impairment, and symptoms of behavioral activation (primarily anxiety), compared to the side effects caused by the other antidepressants and anxiolytics [38-42].

Only a few small studies have evaluated tryptophan augmentation in depressive disorders. A large review found significant methodological flaws in these early studies [43]. However, it will be evident in this opinion paper that have the potential to produce side effects and interactions with psychotropic drugs (e.g., antidepressants). A only case report in the literature related to tryptophan use that caused Eosinophilia-Myalgia Syndrome, occurred because an outbreak which was linked to a single manufacturer and a contaminated batch of tryptophan in the late 1980s.

#### **4. CONSEQUENCES OF THE HYPOTHESES and DISCUSSION**

We believe that the administration of 5-HTP, here in Brazil, prescribed by doctors, and other countries, according to the FDA approval, considered a food supplement, can reduce anxiety as a whole. Taking into account that many thoughts and jealous attitudes, especially those exacerbated has a forward basis, it is suggested that administration of 5-HTP at dosages which may vary according to the age, height and weight of the patients affected by morbid jealousy, can benefit from a significant improvement in symptoms of expression of pathological jealousy. Furthermore, we believe that this significant reduction in disease jealous derived from the reduction of anxiety as a whole, associated with intake of 5-HTP may cause less side effects and adverse effects than other substances required for such cases as anxiolytics, antidepressants and antipsychotics. This supposition suggests a possible connection between the hypotheses to this article.

#### **5. CONCLUSION**

According to the hypotheses formulated above, the 5-HTP increases faster bioavailability and serotonin without as many side effects than

swallowing food, tryptophan sources and anxiolytics prescribed for treating anxiety disorders, respectively. I suggest that this approach by itself could be an effective alternative treatment for patients that exhibit these symptoms of morbid romantic jealousy as long as they are related to anxiety problems. However, further studies are necessary to verify these hypotheses that have been identified in my case studies to emit a possible recommendation on dosage and more comments on interactions and side effects would be very appropriate in further studies. And, as a possible research agenda, two notes can be investigated, giving continuity to what was raised in this opinion paper: (1) Can the efficacy –or lack of efficacy– of pharmacotherapies support –or minimize– the use of 5-HTP? (2) Pharmacotherapy may also provide a rationale for the use of 5-HTP based on the neuroscience of jealousy.

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#### COMPETING INTERESTS

Author has declared that no competing interests exist.

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