

AYAHUASCA VERSUS VIOLENCE – A CASE REPORT

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AYAHUASCA ÉS AGRESSZIVITÁS

Az agresszív viselkedés befolyásolásához számításba vehető farmakoterápiás módszereink meglehetősen korlátozottak. A leggyakrabban alkalmazott szerek, nevezetesen a szelektív szerotonin reuptake inhibitorok [SSRI-k] hatásossága az agresszió kezelésében vitatott kérdés az irodalomban. Jelen tanulmány célja, hogy etnofarmakológiai perspektívával szolgáljon az agresszió kezeléséhez: esetbemutató kapcsán felhívja a figyelmet a Felső Amazonas medencéjében őshonos ayahuasca néven ismert, tea-jellegű növényi forrázat proszociális hatására. Az ayahuasca főzete indián törzseknél és mesztic közösségekben rituális gyógyításra használatos. Tradicionálisan alkalmazzák többek között krízis intervencióban, bűntudat felidőzésében, majd oldásában és morális tartalmú katartikus élmények generálásában.

KULCSSZAVAK: ayahuasca, SSRI-ok, agresszivitás

SUMMARY

We have limited resources available for the treatment and prevention of violent behavior. The usefulness of the most commonly used medications, namely the selective serotonin-reuptake inhibitor [SSRI] agents for the above purpose is a debated issue in the psychiatric literature. The aim of this case report is to add an ethnopharmacological perspective to the management of human aggression. Particularly, attention is called to the potential prosocial effect of the Amazonian beverage, ayahuasca – a decoctum, which has been used traditionally for multiple medico-religious purposes by numerous indigenous groups of the Upper Amazon – and has been found to be useful in crisis intervention, achieving redemption, as well as eliciting cathartic feelings with moral content.

KEYWORDS: ayahuasca, SSRI, aggressiveness

BACKGROUND

Aggression and violence have been increasingly viewed as a global problem with both a biological and a psychosocial basis. Prevention and management of aggressive behavior poses a major challenge to individuals and society. There is well-confirmed evidence linking aggression with dysfunction of the brain serotonin (5-HT) system (De Boer and Koolhaas 2005). The nature of this linkage, however, is not simple. Beyond inhibition of impulsive acts, the role of serotonergic mechanisms is best analyzed within a broader framework that involves different 5-HT receptors in the regulation of emotions and social functioning. Aggressive individuals are likely to experience difficulties with impulse control in particular, and emotional regulation in general; they show altered judgment, and impaired social affiliation. Influencing serotonergic function (with a selective serotonin-reuptake inhibitor [SSRI] agent, for ex-

ample) may affect aggression variably, based on the actual balance between different 5-HT receptor populations, and depending on the individual's impulse control, emotional regulation, and social skills (Krakowski 2003). At last but not at least, in some – but very significant cases for the victims themselves and for their caring family members (for example, see the school massacres to be mentioned below) – the anti-aggressive effect of SSRIs can be unreliable due to poor medication compliance, i.e. erratic intake of the pills.

The tragic shooting rampage at the Columbine High School, Virginia Technical Institute, and lately the Northern Illinois University, with the perpetrators prescribed with SSRI medications, reopened the debate on the safety and usefulness of prescribing SSRIs in violent behavior (Breggin 2003/2004). The common expectation is that SSRI treatment may reduce aggression by restoring serotonin levels in the brain. According to the widely held – but oversimplified – view, acute SSRI

administration promptly increases serotonin levels at the nerve endings. However, this is not the case since neural self-regulatory mechanisms reset the original serotonin concentrations. The adaptive-maladaptive mechanism of the brain may eventually break down only after weeks of treatment (Blier et al. 1998). Therefore, the anti-aggressive effect of SSRIs – if there will be any – takes place after a substantial delay. In fact, considerable clinical data suggests a disadvantageous relationship between SSRI administration and aggressive behavior (Healy et al. 2006). While a direct correlation is highly questionable, the use of these medications for treatment and prevention of violence remains a controversial issue leaving this important therapeutic challenge poorly addressed.

The present case report is an attempt to add an ethnopharmacological perspective to the management of human aggression. In search of inspiration for controlling murderous intent, one may turn to the customs and rituals of tribal – especially warrior-type – cultures of the Amazon region, where in some cases when social tension in the group is on the rise, a community ritual with the use of ayahuasca is called together. Ayahuasca is a tea-like decoction made of plants, such as *Banisteriopsis caapi* and *Psychotria viridis* or *Diplopterys cabrerana*, indigenous to the Amazon and Orinoco river basins of South America. Known under different names such as yagé, natem, mariri, mihi, dapai, and many others, the brew has been used for multiple medico-religious purposes by numerous indigenous groups of the Upper Amazon (Schultes 1982; Luna 1984).

The dimethyltryptamine (DMT) component of ayahuasca has a strong and abrupt facilitating impact on the brain's serotonin mechanisms by acting at serotonin binding sites of the nerve cells (in pharmacology it is called agonistic effect), since DMT is known to be a very potent serotonin agonist agent (Freckska 2007). By means of blocking impulsive behavior and facilitating social interactions, this rapid serotonin action can explain the traditional indication of ayahuasca use in crisis prevention and eliciting redemption (Dobkin de Rios 1984). For example, ayahuasca rituals have been traditional in the culture of the headhunter Shuars for centuries; in essence, the first ethnographic study included this tribe (Karsten 1917; cited in Bruhn et al. 1995). When warriors returned home following warfare or “head hunt”, a community ceremonial with ayahuasca use at its cen-

ter might have served the purpose of social integration by decreasing aggression, and preventing the transfer of “battle fever” into the kin group.

The active ingredients of ayahuasca are the reversible monoamine oxidase inhibitor harmine and harmaline, which makes the serotonin agonist component DMT available for oral use, relatively potent, and long-acting (Callaway et al. 1999). One interpretation of its use in violence prevention and crisis intervention is that the prompt activation of the brain's serotonin binding sites by DMT can mitigate impulsivity and may exert a prosocial effect. As result, ayahuasca may work against violence faster than SSRI medications do. The prosocial, cohesive action effect of ayahuasca is reflected in the quality of the elicited subjective experience, which commonly involves ethical lessons (Shanon 2003). Ayahuasca is highly revered by mestizo curanderos as a stern moral teacher (Luna 1986).

SUBJECT

A 43 year old Caucasian male, never married, who had been convicted twice for manslaughter, and sentenced for a total of 17 years in jail, has been followed-up by the author in a homeless shelter twice a week for nearly three years beginning shortly after his release. The subject fulfilled DSM-IV criteria for antisocial disorder. The motive of the two murders (first at age 15, second at age 28) was not material gain: he committed them on impulse. At 15 he killed his abusive stepfather, and shortly after serving his time for that crime, he killed his superior who allegedly was taking advantage of him and other subordinates. The subject also has history of multiple aggravated assaults. His cognitive performance tested at age 41 revealed a Wechsler IQ of 136.

After serving his second term, he was discharged to a homeless center, where he had been continuously tense, and indicated poor frustration tolerance. It took considerable effort for him to control himself, and not to snap out at everyday nuisances, or mundane injustices. He felt his life was totally empty and useless. He was in dismay, had a foreshortened view of the future, and indicated a low motivation for social rehabilitation. Reportedly, the main reason of his low motivation was that he could not find purpose or meaning in life. “Everything is futile” – was his usual response to prompting. He didn't feel sorry for the victims, but indicated some remorse for their family mem-

bers. His mood had been chronically dysthymic, with seasonal changes (worsening in the winter months), but without ever fulfilling DSM-IV criteria for major depression. His demeanor was characterized by sarcastic behavior, mistrust, and bitterness. He kept social distance, was reluctant to accept guidance, and questioned authority.

It took six months to develop a basic rapport with him. He was not eligible for dynamic or cognitive-behavioral psychotherapy. The sessions were mostly about venting his anger, and included relaxation. Despite the frequent visits and long-term pharmacotherapy with two SSRIs (sertraline 100 mg QAM, citalopram 40 mg QAM), and later with mirtazapine 30 mg QHS, and duloxetine 60 mg QAM, no significant change was observed in his condition. The subject had an unsuccessful trial with bupropion, which increased his tension and had to be discontinued after three weeks. In the past he was a regular pot smoker, and had repeated experiences with LSD and MDMA.

METHOD

In the period between March 21 and April 12, 2007 the subject decided to participate in three ayahuasca sessions with the oral intake of 150-200 ml brew in the context of a simple ritual conducted by an alternative healer. He adhered to a salt and sugar-free diet, and avoided red meat for 3-4 days prior to ingestion. Sessions started with verbalization of his intention, and brief focusing on his expectations for the ceremony. Under constant monitoring by the healer, the subject sat comfortably in a semi-reclined position, in a quiet, shaded room, wearing headphones and listening to meditative music. The sessions were held in the evening after a 6-hour long fast, and lasted for three hours, interrupted only by vomiting – a common side effect of the brew.

FINDINGS AND CONCLUSIONS

The subject gave account of meaningful thoughts and deep moral insights emerging during the sessions. At some point during the first session, his usually emotionless face expressed a feeling of awe. This all-the-time skeptical man mumbled: “I don’t believe this... I would have never thought of

that...” He felt the continuous presence of an unseen “third party” with whom he was running voiceless, “nonverbal” conversation in thought: “I asked It if I have to go to Purgatory. It responded: ‘No, you belong to the Desert, that’s where you already are, and have been tested there.’ Like a kid, I was bombarding It with questions. This imagined being reprimanded me several times: ‘Just slow down, behaving hastily is what has given you the most trouble in life.’ It let me know that without Evil there is no Good. They presume each other. Humans have to be careful to not let Evil spread. If Evil rules even a little place, it will expand to the whole Universe. I had the strong impression if a small part of the world gets spoiled by Evil that may ruin the whole.” At another session, he imagined the same entity confronting him with his lies and misdeeds. After every session, he reported having meaningful insights into his life. One month after the last session the man started to show slow progress in the rehabilitation program of the facility, and six month later he was discharged to start an independent life, concluding more than three years of stay in the homeless shelter. When I relocated from the country, he called me at the airport and said sorrowful farewell in tears.

This agnostic person, without purpose in life, got profound, insightful experiences under the influence of ayahuasca. Since this is an anecdotal case without controls and in lack of quantified outcome measures, far-fetching conclusions cannot be drawn. Nevertheless, giving some sort of redemptive, cathartic feeling with moral content to a man of this background doesn’t represent a step to the wrong direction. Probably a more reliable finding is that during the months following the sessions, no increase has been noted in his aggressive behavior. That is an observation consistent with studies indicating that certain 5-HT receptor agonists do not facilitate, but rather block, aggressive behavior (De Boer and Koolhaas 2005).*

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* Attention is called for a differential approach: while indolalkylamines (the active ingredient of ayahuasca belongs to this group) and ergolines are mixed 5-HT_{1A/B} and 5-HT_{2A} agonists, the phenylalkylamines are selective for the 5-HT_{2A} sites. In the literature there is more data on 5-HT_{1A/B} receptor involvement in aggression as compared to the 5-HT_{2A} receptor type.

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