Case Report

Transient acute paralysis (? Toxicity of ayurvedic medications)- a Case Report

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Abstract

Ayurvedic medicines have a long history of usage in Indian history. Side effects have been listed but enough experience of side effects and toxicity in humans is unknown. Here is a case presented with possible toxicity of Brahmi, Ashwagandha and Shankhpushpi or synergism of side effects resulting in transient paralysis which relieved completely and spontaneously within few days.

Key words: Ayurvedic, Brahmi, Shankhpushpi, Ashwagandha, toxicity, paralysis.

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Introduction

Scientifically, Brahmi is known as Bacopa Monnieri L. Pennell [1, 2]. The herb has been mentioned in several Ayurvedic treatises including Charaka Samhita and Sushruta Samhita in the 3rd century AD. In addition to being a well-known Nootropic herb for centuries, it has also been used as an antispasmodic, alterative, astringent, cardio tonic, diuretic, anticonvulsant, anti-inflammatory, analgesic, antipyretic and antiepileptic agent. [3, 4, 5]. Convolvulus pluricaulis is one of four herbs with the common name of Shankhapushpi that has traditionally been used as a cognitive enhancing herb and Nootropic. Ashwagandha is an Adaptogen. It is supplemented primarily for its ability to prevent anxiety. It also shows promise for relieving insomnia and stress-induced depression, improve physical performance in sedentary people and athletes [6,7,8].

All these drugs are among the most common prescribed and over the counter drugs used in India. These have a long Indian history, but recent studies regarding side effect profile and their synergistic effect on side effects (when taken together) are lacking. We present a case where the child appears to have toxicity due to use of these drugs.

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Case Report

A 13 year old child, 8th class student was admitted in Pediatrics department of this hospital via causality on with complaints of weakness in both lower limbs and right upper limb since 5-6 days. Weakness progressed overnight and was static since then. Patient was not able to walk, sit and feed with right hand without support. No history of seizures or altered sensorium and behavior. Patient had complaint of off and on moderate intensity headache since last 15 days for which he was taken to a doctor who prescribed some medicines which included 3 ayurvedic preparations and 1 pain killer (Diclofenac and Paracetamol). Patient was on Tablet Brahmi Bati by Baidnath (1 tablet twice daily), Tab Smritika (1 tablet twice daily) and Tab Seretone by Indian Herbal Remedies (1 tablet twice daily) since last 5-6 days. There was no other relevant or significant clinical history. There was no history of recent vaccination, trauma, recent viral infection or any chronic drug intake. Child was perfectly normal before this episode and there was no similar history or any other serious health ailment in the past. On examination child had Grade 3/5 power in both lower limbs and 4/5 power in right hand. Deep tendon jerks were brisk (knee and ankle) and Plantar reflex was flexor on both sides. Tone was decreased in both lower limbs at ankle, knee

and hip joints. Muscles were non tender. No cranial nerve involvement was seen. MRI Brain, Complete haemogram, Platelet and Eiosinophils count, Liver function tests, Kidney function tests (including serum electrolytes), Serum Calcium, Fasting blood sugar, X Ray (AP and Lateral) of lumbosacral spine and cervical spine, Thyroid profile, CPK levels, Lipid profile and Urine examination were done and were all within normal limits except Hb was mildly low (11.1 gm%). Psychiatric evaluation and Fundus examination were also normal. No treatment was given and all ayurvedic drugs were withdrawn. Child dramatically improved and was fully normal neurologically within 2 days of hospitalization. Patient was advised to go for further evaluation (for nerve conduction, myography, toxic screen for drugs) at higher centre but he refused. Patient was discharged on 25/4/2016. Patient did not take any ayurvedic drugs during stay in hospital and was advised the same at discharge. Patient did not come for follow up.

Discussion

Scientifically, Brahmi is known as Bacopa Monnieri L. Pennell [1,2]. The herb has been mentioned in several Ayurvedic. Brahmi growing in contaminated areas may be toxic to health when consumed by humans [9]. Bacopa Monnieri, Ashwagandha, Clitoria ternatea, and Asparagus racemosus; touted to be synergistic with each other in at least one (independent) study [10]. Bacopa Monnieri, at 125mg (45% Bacosides) has been implicated in working synergistically with one of the four (or more) following ingredients, Curcumin, Green Tea Catechins, Ashwagandha and Milk Thistle [11]. Similarly side effects could also be additive though studies regarding this are lacking. Animal studies have used doses up to 80mg/kg bodyweight for up to 8 weeks and noted no biochemical side effects. One study used 250mg/kg bodyweight [12] and did not note any metabolic abnormalities whereas another study using this same dose in male mice for 56 days noted no significant health effects, but did notice anti-fertility actions by impairing sperm function, which was reversed 56 days after cessation of Bacopa [13]. One study using 300mg daily in older adults noted more gastrointestinal side-effects (cramping and nausea) than placebo [14]. Other studies also note upset stomachs that are routinely different than placebo [15, 16] and one study noted increased diarrhea [17]. At this moment in time, these remain the only adverse effect noted in humans. No significant case studies exist. Convolvulus pluricaulis (of the family Convolvulaceae and synonymous with Convolvulus microphyllus) is one of four plants that is referred to as Shankhapushpi, and appears to be the 'true' form of Shankhapushpi according to the Ayurvedic Pharmacopoeia [18]. No conspicuous information on toxicity of CP is available so Far. The LD50 of the whole extract of C. microphyllus by oral administration was found to be 1250 (1000-1400) mg/kg. Mice treated with the extract showed a sedative effect at doses greater than 200 mg/kg and reflected a moderate to marked decrease in locomotor activity which lasted 1-2 h. The decrease in motor activity due to spontaneous motor activity was observed during the study. At higher dose (more than 1 g/kg) animals died due to respiratory distress [19].

Withania somnifera (of the family solanaceae) is a highly esteemed medicinal herb in Ayurveda and most popularized as Ashwagandha. While the root extract of ashwagandha appears to be virtually nontoxic at this point in time, high doses of isolated Withaferin A (the anticancer molecule) do possess a toxicity; in worst scenarios, it is about 4-fold higher than the therapeutic dose and difficult to reach via the root extract. In vitro results suggest no toxicity to human blood cells with standard doses of the extract [20] although the dose of Withaferin A that is known to be toxic to healthy cells also appears to cause erythrocytic cell death [21]. It acts as a mild central nervous system depressant. It is generally safe when taken in the prescribed dosage range [22]. Large doses have been shown to cause gastrointestinal upset, diarrhea, and vomiting. Withania somnifera stimulates the thyroid leading to thyrotoxicosis in some humans [23] and in mice [24,25].

Our patient was on Tablet Brahmi Bati by Baidnath (1 tablet twice daily), Tab Smritika (1 tablet twice daily) and Tab Seretone by Indian Herbal Remedies (1 tablet twice daily). These all were given in adult doses (as mentioned on the medicines strip/box). All three of them had Brahmi and Shankhpushpi in adult dosage while 2 of them had Aswagandha in adult dosage.

Though the literature regarding various research studies and trials regarding in depth analysis of various side effects is lacking, it is possible that due to adult doses being given and that too three times (if form of 3 different tablets) our case developed this episode of transient paralysis. Other possibility is that paralysis was due to synergist actions of multiple drugs. Or may be intake of these drugs was an incidental finding.

Parents of the case refused to go to higher centers for further tests and studies and thereby relationship of these drugs with paralysis episode couldn't be confirmed. Further human studies and trials are necessary to confirm or refute our observation in this case.

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