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ANTI TOXIC EFFECT OF *TANKANA AGAINST VATSANABHA-DRUG REVIEW*

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ABSTRACT

It is a not unusual place false impression a few of the public that Ayurvedic drug treatments are secure and without negative reaction. Many toxic flowers had been utilized in Ayurveda medicine. Aconite-primarily based totally Ayurveda drug treatments are normally utilized by Ayurvedic physicians and conventional practitioners /people's healers in number one healthcare. Aconite poisoning following use of natural treatments has been mentioned from Hong Kong, India and Nepal. According to toxicology, Vatsanabha (Aconitum ferox) is a cardiac poison. In Vatsanabha sever toxicity, cardiovascular capabilities include hypotension, sinus bradycardia, and ventricular arrhythmias. Treatment of poisoning in allopathy is particularly supportive. In Ayurveda in remedy of Vatsanabha toxicity Tanakan turned into advised as an antidote, however its mechanism now no longer known. So, a cautiously deliberate analytical examine turned into done for evaluation of Vatsanabha and Tankan to assess the antidote assets of Tankan. In this examine 4 samples [Ashuddha Vatsanabh (AV), Shuddha Vatsanabha (SV), Ashuddha Tankan with Ashuddha Vatsanabha (ATAV), Shuddha Tankan with Ashuddha Vatsanabha (STAV)] had been studied the usage

of Thin Layer Chromatography (TLC). TLC plates had been visualised below 254 & 366nm. UV rays and spraying Dragandorff`s reagent & similarly Sodium Nitrite at the plates already sprayed with Dragandorff's reagent. The carried out examine suggests that Tankan delays and additionally reduces the poisonous consequences of Vatsanabha.

KEYWORD: Vatsanabha, Tankan, Aconite, Antidote. Thin layer chromatography.

INTRODUCTION

It is a not unusual place false impression the various public that Ayurvedic drugs are secure and without unfavourable reaction. Many toxic vegetation was utilized in Ayurveda medication. Aconite primarily based totally Ayurveda drugs are generally utilized by Ayurvedic physicians and conventional practitioners/peoples healers in number one healthcare. Aconite poisoning following use of natural treatments has been mentioned from Hong Kong, India and Nepal. According to toxicology, Vatsanabha (Aconitum ferox) is a cardiac poison. In Vatsanabha sever toxicity, cardiovascular capabilities include hypotension. Ayurveda is one of the maximum historic structures of lifestyles, fitness and cure. Its antiquity is going returned to the Vedas. Ayurveda is a distinctly advanced and codified gadget of lifestyles and original idea and essential concepts like Tridosha Siddhanta, Panchbhautic Siddhanta, etc. The gadget`s middle energy is its holistic technique in the direction of fitness and ailment the usage of herbal treatments derived from medicinal vegetation and minerals. Many toxic vegetation like Ahiphena (Papaver somniferoum Linn.), Bhanga (Cannabis sativa Linn.), Dhattur (Dhatura metel Linn.), Karavira (Nerium indicum Mill.), Kupilu (Strychnos nuxvomica Linn.f.). Langali (Gloriosa superba Linn.), Vatsanabha (Aconitum ferox Wall.), Jayapal (Croton tiglium Linn.), etc. have been applied in Ayurveda medicinal drug. According to Ayurveda, "even a robust poison can become an tremendous medicinal drug if administrated properly; at the opportunity hand, even the most useful medicinal drug can act like a poison if handled incorrectly". Unexpected detrimental reactions can get up due to accidental use of a poisonous herb/medicinal drug/decoction via the patient, misidentification of herbs just so a toxic herb is improper to be a harmless variety, wrong purification of the poisonous ingredients, overdose, irrational prescription, self-medicinal drug and drug interplay with allopathic drugs. The maximum not unusual place aconite primarily based totally medicinal plant Vatsanabha (A. ferox Wall.) is utilized in Ayurveda as an antipyretic, analgesic, anti-rheumatic, appetizer and digestive. Aconite is a robust poison affecting numerous systems. Pure aconite can reason demise at a dose of two

mg, at the same time as 1 g of the aconite plant is fatal." Vatsanabha, Kupilu (Strychnos nuxvomica Linn.f.). Langali (Gloriosa superba Linn.), Vatsanabha (Aconitum fe- rox Wall.), Jayapal (Croton tiglium Linn.), etc. had been carried out in Ayurveda remedy. According to Ayurveda, "even a sturdy poison can end up an amazing remedy if administrated properly; on the possibility hand, even the maximum beneficial remedy can act like a poison if dealt with incorrectly". Unexpected unfavourable reactions can arise because of accidental use of a toxic herb/remedy/decoction through the patient, misidentification of herbs in order that a poisonous herb is fallacious to be an innocent variety, incorrect purification of the toxic ingredients, overdose, irrational prescription, self remedy and drug interaction with allopathic drugs. The most now no longer unusual place aconite based absolutely medicinal plant Vatsanabha (A. ferox Wall.) is applied in Ayurveda as an antipyretic, analgesic, anti-rheumatic, appetizer and digestive. Aconite is a sturdy poison affecting sever systems. Pure aconite can purpose loss of life at a dose of mg, on the equal time as 1 g of the aconite plant is fatal." Vatsanabha (aconitum ferox) Active Principles (Alkaloids) of Aconitum ferox are Aconitin (acetylbenzoyl-aconine), Pseudo-aconitine (veratroyl-aconine), Aconine, Picraconitine (benzoyl-aconine), Ben- zoylamine and Nepelline. Of some of these lively principles (alkaloids) acquired from the Indian species of aconite plant, it's miles stated that pseudo-aconitine is the maximum toxic." Aconitine first stimulates and paralyses the peripheral terminations of sensory and secretory nerves, the imperative anxious system. myocardium, skeletal and easy nerves, however it does now no longer appear to have an effect on the better centres of the mind for attention typically stays until the end.

"Toxicity of Vatsanabh”

A. Local action If leaves and flowers are Handles or rubbed, sensation of tingling and numbness arise on hands. Due to pollen grains, there may be ache and swelling in eyes.

B. Internal motion If aconite is ingested in any form, it produces signs of tingling and numbness inside few seconds. These signs are visible first on lips, mouth, tongue, throat after which spreads everywhere in the body. After this salivation, nausea, vomiting, ache in stomach and occasionally diarrhoea is visible. There is dryness of mouth; Patient is not able to swallow inflicting dysphasia, with profuse sweating, affected person feels paralyzed. There is vertigo in conjunction with sensory loss in vision, listening to and speech. Because of visible disturbance, diplopia might also additionally arise. Patient feels ringing withinside the ear. There is muscular weak spot in limbs and that progresses to ataxia. Patient might also additionally experience twitching in muscle tissues and convulsions in remaining stage.

Sometimes cramps in muscle tissues are visible. In aconite poisoning there may be exchange contraction and dilation of students that's referred to as Hippus reaction. In early levels the Hippus signal is visible however in later levels, students get dilated. Because of stimulation of vagus nerve disintegrate might also additionally arise. Pulse turns into slow, low extent and irregular. Blood pressure positive falls in early levels, respiratory is fast however turns into slow, dyspnoea arise with shallow breathing. The pores and skin turn into bloodless and clammy with hypothermia. Mind remains clean even though there are hallucinations. Death ensues from ventricular fibrillation or breathing paralysis. Management of aconite toxicity is supportive, such as on the spot interest to the essential features and near tracking of blood strain and cardiac rhythm. Inotropic remedy is needed if hypotension persists and atropine ought to be used to deal with bradycardia. Some Ayurvedic textual content states, Tankan to be an antidote of Vatsanabh, however it`s mode of motion is obscure. Tankan is chemically referred to as Borax (Na2 B407. 10 H2O). It is utilized in Ayurvedic remedy of loss of menstruation, cough, bronchitis etc. It is likewise used as ingredient in lots of ayurvedic medicinal drug speciality the ones kalpas which comprise vatsanabha as most important content. The idea of getting Vatsanabh in conjunction with Tankan in Kalpas predicts that the concept of the usage of Tankan is probably to decrease poisonous consequences of Vatsanabh. This idea highlights the anti-dote assets of Tankan in Vatsanabh Poisonous-Antidotes are the materials which countract or neutralize the impact of poison. Common modes of motion of antidote-

1. Inert complicated formation e.g., chelating sellers for heavy metals
2. Accelerated detoxing e.g., thiosulphate for cyanide
3. Reduced poisonous conversion e.g., ethanol for methanol
4. Receptor web page blockade e.g., atropine for organophosphates at muscarinic receptor webpage 5. Toxic impact pass e.g., 100% Oxygen in cyanide poisoning Tankan is ready from Sodium borate (Na2 B4O7. 10 H2O) – It is heated to repass moisture, after which similarly heated to get white dry powder. It is smelly in taste, warm in nature. It is right for heart, beneficial in Vata imbalance diseases. It is used withinside the remedy of cough, bronchitis. It is likewise utilized in treating meals poisoning. It improves digestion power, relieves bloating. It induces menstruation in girls struggling with amenorrhea or oligomenorrhea (Scanty menstrual flow). While going throught the literatures, its antidote belongings in Vatsanabh toxicity isn't always mentioned in any Ayurvedic samhita. Considering this, the take a look at has been deliberate to assess the antidote property of Tankan the usage of Thin layer chromatography.

AIM AND OBJECTIVES

AIM

To study the anti-toxic property of tankan against Vatsanabha.

OBJECTIVES

1) To study Toxic constituents of Vatsanabha.
2) To study fatal dose, fatal period and toxic action of vatsanabha.
3) To study anti toxic action of Tankan.

MATERIAL AND METHODS

Collection and identity of cloth In this take a look at we use Vatsanabh and tankan. Both of the medication had been procured from the local marketplace of Pune, Maharashtra, India This analytical take a look at become accomplished the usage of ashudha and purified Tankan with Vatsanabha. For the reason Tankan become purified first.

Purification of Vatsanabha

Vatsanabha become soaked in Gomutra (cow urine) for three days. Daily Gomutra become changed via way of means of clean gomutra. After three days Vatsanabha become taken out and its top layer of pores and skin become removed with knife. Then Vatsanabha become reduce into small portions and dried in sunlight.

Purification of Tankana: Raw tankan become first powdered, then it became taken in warm iron pot & stirred until it intumesced. This Tankan become then powdered very first-rate and used for analysis.

Analytical Study- After purification process, analytical take a look at become accomplished, the usage of thin layer Chromatography. For Thin layer chromatography four samples had been taken i.e. Ashuddha Vatsanabh (AV), Shuddha Vatsanabha (SV), Ashuddha Tankan with Ashuddha Vatsanabha (ATAV), Shuddha Tankan with Ashuddha Vatsanabha (STAV). Thin Layer Chromatography (TLC) 15 1) For TLC first organized simulated gastric juice. sixteen Simulated Gastric Juice become pre pared in step with the subsequent technique of the USP, the countrywide formulary:1) 3ml. of conc. HCl, 2gm. of NaCl, Dilute to 1litre. 2) By the usage of this juice, we extracted alkaloids from samples i.e., Ashuddha Vatsanabha [AV], Shuddha Vatsanabha [SV], Ashuddha Tankan with Ashuddha Vatsanabha (ATAV), Shuddha Tankan with Ashuddha Vatsanabha (STAV). The contents of samples had been

taken in separate conical flasks. To every flask 7ml of simulated Gastric Juice become delivered, become shaken for 20 minutes, allowed to settle for two minutes. The supernatant become decanted, centrifuged for 5 minutes at medium speed. Then supernatant become collected. The residue become delivered again to the identical conical flask and become extracted with some other 7ml gastric Juice as above and become extracted successively for five instances in case of all samples. 2) 2ml of chloroform become delivered to extract and shaken for 5min. decrease layer become taken out. The aqueous layer further extracted with 2 into1ml chloroform as above. 3) Pulled chloroform layer was concentrated to exactly 1ml, and 50uL was taken to spot it on TLC plate (MERK) and was run using Toluene, Methyl acetate, and Diethyl amine (4.17:2.5:1).17 The plates were visualized under 254 and 366 nm UV rays and by spraying Dragandorff's reagent and further Sodium Nitrite on the plates already sprayed with Dragandorff's reagent.

RESULTS: Results obtained after analysis are mentioned are as follows

Extraction→ Sample↓	**1st**	**2nd**	**3rd**	**4th**
AV	Absent	Absent	Absent	Absent
SV	0.14, 0.01	0.14, 0.01	0.14, 0.01	0.14, 0.01
STAV	0.59,0.14	0.59, 0.14	0.14	Absent
ATAV	0.59	0.59	0.72(VF),	0.72(VF), 0.62(VF),
			0.62(VF),	0.59(VF),0.34(VF),0.2,0.11,0.8(orange)
			0.59(VF)	

*VF – Very Faint 1) In Ashuddha Vatsanabh there was no spot observed. 2) Two spots were found in Shuddha Vatsanabha with RF values 0.14 and 0.01. First spot at 0.14 was originally cream colored and another at 0.01 was intense blue coloured. Same spots were found in 1st, 2nd, 3rd and 4th extraction. 3) In STAV sample 2spots were found at different RF values 0.59 and 0.14. These both spots were found in 1st and 2nd extraction. In 3rd extraction only one spot (0.14) was found. In 4th extraction all spots were absent. 4) In ATAV sample only one spot was found at 0.59 in 1st & 2nd extraction. In 3rd & 4 th extraction 3 spots were found i.e. 0.72, 0.62, and 0.59 which were very faint. In 4th extraction 4 more spots were found i.e. 0.34, 0.2, 0.11 which were very faint and at o.8 which was orange colored.

Table 2: RF values under UV 254nm [Bluish on green background].

Extraction→ Sample↓	1st		2nd		3rd		4th	
	0.72	0.59	0.72	0.59	0.72	0.59	0.72	0.59
AV	×	VB	×	VB	×	×	×	×
SV	SB	VF	SB	×	SB	×	SB	×
STAV	SB	×	SB	×	SB	×	F	×
ATAV	SB	SB	SB	SB	SB	SB	F	VF

*SB- Slight bold, VB – very bold, F – faint, VF – very faint 1) In Ashuddha Vatsanabha in 1st & 2nd extraction one very bold spot was found at 0.59 which was absent in 3rd and 4th extraction. 2) In Shuddha Vatsanabha one slightly bold spot at 0.72 was found in 1st, 2nd, 3rd & 4th extraction. Second very faint spot at 0.59 was found in 1st extraction which was further absent in 2nd, 3rd & 4th extraction. 3) In STAV sample one slightly bold spot at 0.72 was found in 1st, 2nd & 3rd extraction and it was faint in 4th extraction. 4) In ATAV sample, one slightly bold spot at 0.72 was found in 1st, 2nd & 3rd extraction and it was faint in 4th extraction. Another slightly bold spot at 0.59 was found in 1st, 2nd & 3rd extraction which was very faint in 4th extraction.

Table 3: RF value after Spraying Dragandorff's Reage.

Extraction→ Sample↓	1st			2nd			3rd			4th		
	0.72	0.62	0.59	0.72	0.62	0.59	0.72	0.62	0.59	0.72	0.62	0.59
AV	F	B	VB	×	×	F	×	×	×	×	×	×
SV	×	×	×	×	×	×	VF	×	×	×	×	×
STAV	VVF	×	×	F	×	×	F	×	×	×	×	×
ATAV	VVF	SB	×	VVF	SB	×	VVF	SB	×	×	×	×

*F – faint, B – bold, VB – very bold, VVF – very very bold, SB – slight bold 1) In Ashuddha Vatsanabha 3 spots were found in 1st extraction. 1st faint spot was found at 0.72 which absent in 2nd, 3rd and 4th extraction. Second bold spot was found at 0.62 which also absent in further extraction. Third very bold spot was found at 0.59 which become faint in 2nd extraction and then absent in 3rd & 4th extraction. 2) In Shuddha Vatsanabha only one very faint spot at 0.72 was found in 3rd extraction. There was no spot in 1st, 2nd & 4th extraction. 3) In STAV sample only one spot was found at 0.72 which was vey very faint in 1st extraction and becomes faint in 2nd & 3rd extraction and absent in 4th extraction. 4) In ATAV sample 2 spots were found. First very very faint spot was found at 0.72 in 1st, 2nd,

3rd extraction and absent in 4th extraction. Second slightly bold spot at 0.62 was found in 1st, 2nd & 3rd extraction and absent in 4th extraction.

Table No. 4 RF value after Spraying Dragandorff's Reagent & Sodium Nitrit.

Extrac-tion→ Sample↓	1st				2nd				3rd				4th			
	0.72	0.62	0.59	0.46	0.72	0.62	0.59	0.46	0.72	0.62	0.59	0.46	0.72	0.62	0.59	0.46
AV	F	B	VB	VF	×	VF	B	×	×	×	VF	×	×	×	×	×
SV	SB	×	×	×	SB	×	×	×	B	×	×	×	F	×	×	×
STAV	SB	×	×	VF	SB	×	×	VF	SB	×	×	VF	SB	×	×	VF
ATAV	B	×	B	F	B	×	B	F	B	×	B	F	B	×	F	×

* F – faint, B – bold, VB – very bold, VF – very faint, SB – slight bold 1) In Ashuddha Vatsanabha 4 spots were found in 1st extraction. First faint spot at 0.72 was found in 1st extraction and absent in 2nd, 3rd & 4th extraction. Second bold spot at 0.62 was found in 1st extraction and it was very faint in 2nd extraction and absent in 3rd & 4th extraction. Third very bold spot was found at 0.59 which was bold in 2nd extraction, very faint in 3rd extraction and absent in 4th extraction. Fourth very faint spot at 0.46 was found in 1st extraction and absent in 2nd, 3rd and 4th extraction. 2) In Shuddha Vatsanabha only one spot was found at 0.72 which was slightly bold in 1st & 2nd extraction, bold in 3rd extraction and faint in 4th extraction. 3) In STAV sample, 2 spots were found. First slightly bold spot was found at 0.72 in 1 st, 2nd, 3rd & 4th extraction. Second very faint spot was found at 0.46 in all 4 extractions. 4) In ATAV sample 3 spots were found. 1st bold spot at 0.72 was found in all 4 extractions. Second bold spot was found at 0.59 in 1st, 2nd and 3rd extraction & it becomes faint in 4th extraction. Third faint spot at 0.46 was found in 1st, 2nd, 3rd extraction and absent in 4th extraction.

DISCUSSION

Vatsanabha is known to be the strongest cardiac poison. Management of aconite overdosing is supportive, including immediate attention to the vital functions and close monitoring of blood pressure and cardiac rhythm. However, it is a very well-known ingredient of many Ayurvedic formulations and is prescribed as an antipyretic, analgesic, appetizer and a digestive. These formulations usually contain Shuddha Vatsanabha along with Shuddha Tankan. Some Ayurvedic text states, Tankan to be an antidote of Vatsanabha, Tankan is good for heart and Vatsanabha is a cardiac poison. Also our study confirms that Shuddha Tankan

not only delays but also reduces the toxic effects of Vatsanabha. Thus, by using Tankan the medicinal properties of Vatsanabha can be utilised without causing appreciable harm to the body.

CONCLUSION

The performed examine suggests that Tankan delays and additionally reduces the poisonous outcomes of Vatsanabha. But position of Ashuddha and Shuddha Tankan isn't always clean on this examine due to the fact it's miles a qualitative evaluation. It desires similarly quantitative evaluation like HPTLC to show the performance of Tankan.

Photograph of vatsanabha shodhan

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