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Namburi Phased Spot Test Analysis (Npst) of Rasasindura (Herbomineral Preparation)

Ayurveda

KEYWORDS : Rasasindura (red sulphide of mercury) and Namburi phased spot test

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ABSTRACT

Rasasindura (red sulphide of mercury) is a type of kupipakvarasayana (medicine prepared in bottle) and it is called as Red sulphide of mercury. Mainly used in the condition of Prameha (diabetes mellitus), Bhagandara (fistula), Rajayakshma (tuberculosis), Kushtha (leprocy), Pandu (anaemia), Gulma (extra growth) etc. The analysis of Rasasinura (red sulphide of mercury) was done by NPST (nambhuri phased spot test) to know the proper preparation of Rasasindura (red sulphide of mercury). The analysis was observed in three phases, from 0min to 72 hours and compared with standard protocol. The prepared Rasasindura (red sulphide of mercury) shows accurate results.

Introduction:

Rasasindura (red sulphide of mercury), most commonly used in Kupipakwa Rasayana (preparations prepared in the glass bottle) is a sublime product of a mixture of Shodhita Parada (processed mercury) and Shodhita Gandhaka (purified sulfur), and due to its wide therapeutic utility, it is used in several formulations. The therapeutic repertory ranges from treating diseases like diabetes mellitus, indigestion, fever, urinary tract infection, and respiratory infections to alleviating aging as an aphrodisiac and rejuvenator.

Rasasindura (red sulphide of mercury)explained in "Paradamurcchana vignana"1, Ayurvedic Pharmacopeia prescribe Rasasindura (red sulphide of mercury) as an effective medicine for various diseases like Prameha (diabetes mellitus), Bhagandara (fistula), Rajayakshma (tuberculosis), Kushtha (leprocy),Pandu (anaemia), Gulma (extra growth) etc.2

Rasasindura (red sulphide of mercury) is Deha-Bala (strengthens the body) and Virya-vardhaka (increases the potency), Rasayana (rejuvenative). It alleviates Vatadidosha and increases longevity and vitality.

The Namburi Phased Spot Test (NPST), a spot test based on a chemical reaction, is a technique for quality assessment of a Sindhura and bhasma (calx). When a drop of clear solution of a substance under examination (Bhasma or Sindhura) is put on specially prepared paper, a spot appears which manifests a series of colour and pattern changes. The NPST involves observations of the spot and its colour, at three successive phases spread over three differenttime intervals. It thus has the advantage of measuring reactions at different time intervals.The technique was developedand standardized by Dr. Namburi Hanumantha Rao in1970, it has been accepted by CCRAS, New Delhi.

Materials and Methods

Involves following steps,

- Preparation of Rasasindura (red sulphide of mercury)
- Preparation of paper and solution for NPST
- Evaluation of NPST

Preparation of Rasasindura (red sulphide of mercury)

Authenticated raw drugs were procured from K. L. E. Ayurveda Pharmacy Khasbag, Belgaum, Karnataka. Parada (Mercury) and Gandhaka (sulphur) were subjected to shodhan (purification) procedure. Parada (mercury) and Sudharaja (lime powder) are taken in khalvayantra (mortar and pestle) and triturated continuously for 3 days i.e. 7- 8 hrs /day approximately. Colour of Sudharaja (lime powder) turns into black. Most of the Parada (mercury) was get collected in the middle of khalva (mortar and pestle) which was shining. This Parada (mercury) was collected in the glass bowl separately. Remaining Parada (mercury) was collected after vastragalana (filtration through cloth) and remaining Sudharaja (lime powder) was washed with hot water. To this Parada (mercury) equal part of Nistushlashuna (dehusked garlic) and its half part Saindhavlavana (rock salt) was added and triturated well till the kalka (paste) turns in to Krishna varna (black colour). Next, this was washed with water and shiny, clean and clear Parada (mercury) was collected and stored in glass bowl.3

Previously weighed Gandhaka (sulphur) was powdered in khalwayantra (mortar). Equal quantity of Goghrita (cow's ghee) was taken in lohadarvi (iron ladder) and subjected to mandagni(low flame). To this powdered Gandhaka (sulphur) was added and mandagni (moderate temperature) was continued and stirred with spoon intermittently. When Gandhaka (sulphur) melted completely, it was poured in to a Godugdha (Cow's milk) in a vessel. The Gandhaka (sulphur) from Godugdha (cow's milk) was collected and washed thoroughly with hot water.Then it was dried under shade.This procedure was repeated for 3 times.4

Initially shodhita Gandhaka (processed Sulphur) was taken in the khalwayantra (mortar and pestle) and made into fine powder. Then equal quantity of shodhita Parada (processed mercury) was added and trituration was done. 6 to 7 hours trituration was carried out daily. Kajjali pareeksha's (mixture of mercury and sulphur) like Nischandrika (absence of shining particle), Nirdhuma (absence of smoke), Varitara (which floats on surface of water), Unnam (grain placed on the surface of kajjali not sinks), Rekhapurnata (enters the furrows of fingers) tests were performed.5

Kajjali (black sulphide of mercury) was taken in a Khalwayantra (mortar and pestle), to this 200 ml Vatankuraswarasa (juice of banyan leaf bud) was added and Mardana (trituration) was done till the evaporation of liquid i.e about 5 and 1/2 hrs. This samyakbhavitakajjali (properlyprocessed black sulphide of mercury) was dried in shade and was filled in kachakupi (glass bottle) which was rapped with 7 layers of kapadmitti(rags and mud) and kept in valukayantra (sand contained iron vessel), heat was given in mridu(100-2500 C), madhyam (250-4500 C) and teevragni (450- 6000 C). The whole procedure was completed in 21 hours. After swangasheetala(self cooling) kupi (glass bottle) was taken out from the valukayantra (sand contained iron vessel). The mud smeared cloth layers of the kupi (glass bottle) were scrapped out with a knife. A jute thread dipped in kerosene was tied to the kupi (glass bottle) below the level of sublimated prod-

uct and ignited. When the whole thread gets burnt off, wet cloth was wrapped around that. The bottle gets broken into 2 equal halves with a breaking sound. From the neck region Sindura (red sulphide of mercury) was collected scraped and collected in a cleaned glass bowl.6

Preparation of paper and solution for NPST: 7, 8. 10% Potassium iodide paper preparation

Materials

- 10% Potassium iodide solution (10 gm of potassium iodide and 100ml of distilled water)
- Whatman's filter paper no.1

Procedure

Dipped a Whatman's filter paper in a 10% Potassium iodide solution and waited for 2min, then removed from solution and kept for drying in shade.

Solution preparation

Materials

- Rasasindura– 1 gm
- Aquaregia (Conc. HCL & Conc. Nitric acid, 3:1)

Procedure

Taken 1gm of Rasasindura (red sulphide of mercury) in centrifuge test tube and added 2ml of freshly prepared Aqua regia drop by drop and allowed to react for 30 min. The heat was given for a minute on a spirit lamp. By heating the solution, the interaction between the substance and reagent started with effervescence. Allowed them to react for 48 hours, in between test tube was shaken. After 48 hours the clear solution was taken and single drop was putted on 10% Potassium Iodide paper. The colour changes of the paper observed in 3 different phases.

1st Phase – 0 to 5min

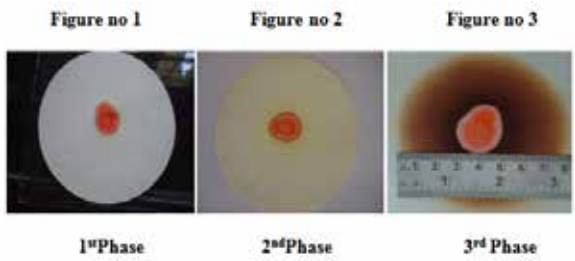
2nd Phase –5 to 20 min

3rd Phase – 20 min too few hrs

Table No.:1 NPST Analysis of Rasasindura (red sulphide of mercury)

S.No	Phase	Observation
01	1st	Brick red solid spot with dark brown periphery was seen
02	2nd	Dark brown periphery was fades away slowly
03	3rd	Dark brown periphery which was fades away slowly with great extent

Images of NPST of Rasasindura (red sulphide of mercury)



Observation and Results:

Rasasinura (red sulphide of mercury) Parikshana (testing) according to NPST is given in Table no.1

Discussion and Conclusion:

The Rasasindura (red sulphide of mrcury) was prepared according to the classic but lots of difference in the procedure. In classic mentioned that heat should be given about 12 hours but practically it was completed in an around 21 hrs. The sealing was done after copper coin test; at the bottom suryodayapratibimb (colour of sunset) tests were positive.

NPST, as the test is chemical reaction-based, with specific results for specific sindura or bhasma, we can differentiate clearly. This technique is very helpful for quality assessment of Sindura as per the standards of Rasashastra (Indian Iatro chemistry). It is a simple test that it can be carried outwith minimum set up and requirements. CCRAS has also accepted the monograph of NPST, and so the quality of Sindura can be checked before being used therapeutically. In the present study, the Rasasindura (red sulphide of mercury) gave results in accordance to NPST standards.

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