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DETECTION METHODS OF VISHA (POISON) IN AYURVEDA AND MODERN SCIENCE

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ABSTRACT

From ancient times people use poison to harm and kill kings, wealthy people, and animals for many purposes. Visha were mixed with food, drinks, and cosmetics for their personal benefits. Hence, it is very necessary to examine all the food materials and tools of our surroundings for the detection of these types of poisons. In Ayurveda texts, various methods of detection of these types of visha are mentioned like Panchbhautika Pareeksha, the effect of poisons on birds and animals, and signs and symptoms in humans after ingestion of different types of Visha like Sthavara Visha and Jangama Visha. In ancient times ayurveda mentions some classical methods for the detection of poison like panchbhautik pariksha, animal and bird examination, etc. In modern texts, various analytical tools are mentioned for the detection of different types of poisons like Chromatography, Mass Spectrometry, Spectrophotometry, Immunoassay, and Radioimmuno Assay. After analysis of different types of techniques used in Ayurvedic texts as well as modern literature, it is concluded that the detection of Visha is an important aspect of the treatment of poisoning. So there is needed to develop more techniques for the detection of different types of poison.

AIM AND OBJECTS

1) To find out classical methods of detection of poison in food

2) In some rural areas where is not possible to examine poisonous food use these ancient methods.

3) To discover new modern technics

KEYWORDS: visha, Panchbhautika Pareeksha, modern detection method.

INTRODUCTION

Ayurveda is a life science. Agada Tantra is an Ashtanga Ayurvedic branch that deals with the identification, detection, and symptoms of poisoning caused by different varieties of Visha, such as Sthavara Visha and Jangama Visha and their management. Poison is defined in modern literature as a substance that, when introduced into or in contact with the body parts of a live individual, causes illness, disease, or even death.

In the event of a poisoning, modern tools such as Chromatography, Mass Spectrometry, Spectrophotometry, Immunoassay, and Radiommuno Assay can be used to detect the poison. Ayurveda describes different visha Pareeksha such as poisonus food examination on birds and animals, Panchbhautika, and most Vishas are diagnosed through their signs and symptoms.

MATERIALS AND METHODS

For the detection of different types of poisons, some Ayurvedic texts and modern literature were studied. The examination of poisoning as explained in the Samhitas can be understood as follows.

EXAMINATION OF POISONUS FOOD ON ANIMALS AND BIRDS

Examination on birds

1. Makshika kak vinashyanti (destroy).
2. Chakora (Chakora bird) When seeing to poisoned food, the Chakora bird's eyes become discoloured.
3. Jeeva jeevaka When the poisoned food was discovered, the Jeeva jeevaka bird passes away.
4. Kokil (cuckoo) The cuckoo voice becomes weird.
5. Krauncha (Krauncha bird) Intoxication(mad) inebriant occurs in the Krauncha bird.
6. Mayura (Peacock) The normally cheery peacock becomes exited(harsh) and disturbed(udhivgna).
7. Shuksarika (parrot &maina) krosh (shout with fear)
8. Hansa(Swan) chavedyati (crackles excessively).
9. Bhringaraja (Bee) kujyati (raises its inarticulate voice).

Examination on animals

1. Prishata(Spotted deer) visrajyate ashru (sheds tears).
2. Markata (Monkey) vistha munchati (passes stool).

Panchabhautika Pareeksha

Panchamahabhutas are the foundation of the world's evolution, and the Visha Dravyas are no exception. The Visha Dravyas contain the precise characters of Shabda, Sparsha, Roopa, Rasa, and Gandha, and hence the evaluation of poison can be done based on these characters.

Explanation of Pareeksha

1. Shabda Pareeksha When poisoned food is set on fire, it makes a cracking sound.
2. Sparsha Pareeksha When poison comes into touch with the hand, it causes a burning sensation and the nails to fall out.
3. Roopa Pareeksha When poisoned food comes into touch with fire, the gases turn the hue of a peacock's neck (blue) and become unpleasant.
4. Rasa Pareeksha Animals that consume the poisoned food, such as flies and crows, die immediately.
5. Gandha Pareeksha The odours produced when poisoned food is burned are observed to be fragmented (i.e. not continuous), powerful, and do not subside soon.

2**. Examination of Drava Dravya Visha (Poisonous liquids)**

Poisonous liquids like milk, water, alcohol etc. have Different kinds of lines that may be seen on the surface of the liquid Formation of froth and bubbles like sound Images are not seen in such liquids and if they are even seen, they look double, porous, thin or distorted.

3. Examination based on Symptoms

Sthavara Visha Lakshana

Fever Hiccup Sensitiveness of teeth Spasm in the throat Frothy saliva Vomiting Anorexia Dyspnoea and fainting

Jangama Visha Lakshana

Sleep Drowsiness Exhaustion (Mental fatigue) Burning sensation Inflammation Horripitation Oedema Diarrhoea

Modern Toxicology Techniques for Poison Detection

The following are some current analytical techniques that can be utilized for qualitative and quantitative poison analysis.

Chromatography – Chromatography technique for separating mixtures from their component in order to analyze, identify, purify, and quantity of components. Chromatography processes are classified into several categories. Thin-layer chromatography (TLC) and gas-liquid chromatography (GLC) are the most widely used. The test sample is conveyed through a matrix or across the surface of the stationary phase by the mobile phase, which is an organic solvent in TLC and an inert gas nitrogen in GLC. In TLC, the stationary phase is silica gel (Sio2) with calcium sulphate as a binder, while in GLC, columns such as Apiezen and SE-30 are utilised. The components of the test sample migrate at various rates and get separated. The compound's migration rate (Rf in TLC and retention time in GLC) is distinctive. The isolated compound is located in TLC by colour reactions with several chromogenic reagents. GLC employs electron capture and UV detectors. TLC equipment is fairly simple, and this technique can be used in any small laboratory. GLC necessitates the purchase of an expensive instrument. TLC is appropriate for non-volatile substances, whereas GLC is appropriate for volatile ones. TLC is routinely used to identify and compare samples of drugs, biological samples like saliva, urine, and blood, for the presence of drugs. HPLC (high-pressure liquid chromatography) is a more complex device that works on The same principles apply here, but the mobile phase is under high pressure, increasing the technique's efficacy significantly. It is appropriate to refer to it as high-performance liquid chromatography.

Mass Spectrometry - The sample is bombarded with an electron beam in a mass spectrometer. As a result, charged molecules or ionic fragments of the material are formed. After that, the charged particles are separated and detected. Spectrophotometry Radiant energy can be absorbed or emitted by a toxic chemical. A poison absorbs different wavelengths of light depending on its constituents.

A spectrophotometer is made up of a radiation source, a monochromator, a sample cell, and a detector that is used to quantify the absorption of various wavelengths of radiation.

Immunoassay - Immunological techniques have recently been introduced in toxicology. Immunological procedures are based on the antibody-antigen reaction, which is both sensitive

and specific. It can be used for both qualitative and quantitative analyses. In this approach, a labelled antigen or antibody is used. A radioisotope is the most usually used label, and the enzyme immunoassay is the most commonly utilised.

Radioimmuno Assay (RIA) -It is a highly sensitive in vitro test technique that uses antibodies to determine the concentration of antigens (for example, hormone levels in the blood). The bound antigens are then separated from the unbound ones and the radioactivity of found antigens remaining in the supernatant is measured using a gamma counter.

DISCUSSION

Poison is defined as a material that, when introduced into or in contact with the body parts of a live subject, causes illness, disease, or even death. Various methods for detecting poison, such as chromatography and mass spectrometry, are available in current instruments. Spectrophotometry, Immunoassay, and Radio Immunoassay are all types of tests. Visha is classified into two categories in Ayurveda: Sthavara Visha and Jangama Visha. The detection of several forms of poisons, such as Sthavara Visha and Jangama Visha, was diagnosed based on their indications and symptoms. Hence, it was very necessary to examine all the food materials and tools of our surroundings for the detection of these types of poisons Various techniques of detecting these sorts of Visha are referenced in Ayurvedic writings, such as Panchbhautika Pareeksha, the effect of poisons on birds and animals, and signs and symptoms in people following injection of different types of Visha.

CONCLUSION

The detection of poison is important in the treatment of poison. After ingestion of different types of poisons such as Sthavara visha, Jangama visha, and many other forms of poisons, produces various signs and symptoms arise in humans, birds, and animals. Many ancient and modern methods for detecting various types of poisons are mentioned in Ayurvedic Samhitas and modern literature, respectively. So, after careful examination of these procedures, Give us confirmation of that which type of poison or chemical uses their chemical formulation which helps us to treat the patient in the right direction immediately.

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