



Animal Toxins-Emerging Field in New Millenium

Historical evidences shows that venomous poisonous animals have always fascinated man in many ways. Many animals have the apparatus or organs which produces toxins and it is used for offence. As in capturing and digestion of food of for defense as to protect themselves from the predators. In some animals venom is used for both the purposes ex Cobra, scorpion etc.

The term venomous animals are the animals which have highly developed secretory organ or groups of cells which are capable of producing / secreting the poison. This poison / toxin produced may be delivered during biting or stinging act.

Poisonous animals generally have toxins / poisons in their tissue, either in part or in total / entire. So all venomous animals are poisonous but not all poisonous animals are venomous. The animals which have a definite venome apparatus are referred as phanero-toxic while the animals with poisonous body tissues are called crypto toxic. For example Cobra, (Reptile), Sting ray (fish), Back window spider (Arthropoda) are phanerotoxic or venomous. The blister beetles, certain puffer fishes and toads are said to be poisonous or crypto toxic. (Russell. 1965a).

Poisonous animals do not have special apparatus nor have any duct to carry their secretion/toxins i e they do not possess delivery apparatus. In such cases poisoning occurs when injection of poisonous animals occurs. But venomous animals have special glands and secretory material is produced by cells and carried by ducts

called as venome duct i e they have special venome producing and delivering structures. Generally known as stings, spines, Jaws, teeth, fangs etc. When biting / stinging act occurs and they deliver toxin. (Russell, 1965b).

Some of the poisons produced by animals may be toxic or lethal. Toxic means it causes changes in the blood cells, coagulation problems, changes in nervous and muscular co-ordination, or any changes which may not / did not necessarily end in the death. But some of the toxins produced by animals may be lethal which results in death. The lethality refers to the end point of death. While describing any animal Venome, it is essential to record the toxic or lethal properties of the venome.

The reports of marine animals which were poisonous are found in the hieroglyphics of the tombs of Ti (fifth Dynasty, 2700 BC) The poisonous puffer fish, *Tetradon stellatus* is shown by inccriptions in Egypt. Other references are also available in China. Many Chinese Workers (618-1644 AD) has described list of many venomous and Poisonous fishes which were dangerous to man. (Read, 1939) in Chinese Materia Medica of fish drugs. Puffer fish poisoning was known as early as Sung Dynasty (960 AD) By considering the venomous fish, the sting ray caudal spine was used in the orient as a spear head during the times of Aino, 2000 years ago, and even before that by Jomon people (5000-2000 BC) They have used sting ray poison as power or paste on their spear head made out of stings/spines of rays (Tomlin, 1966, Bisset, 1976). Aino used dried caudal spine a Japanese sting ray, *Dasyatis akaijei* as a weapon.

The Greek physician-poet Nicander (384-322 BC) described the Venomousness of the sting ray. He compared Moray eel to Viper because its bite is so poisonous like that of Viper. In his *Theriaca* Nicander noted the *Trachinus*, weever fish as the sea dragon.

In *Historia Naturalis* of Gaius plinius secundus (23-79



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AD) have many fascinating account of venomous and poisonous animals. It has section of weever fish and sting rays, which deals in details of them.

CHEMISTRY AND PHARMACOLOGY:

Chemical and pharmacological properties of the marine toxins are far more than the toxins of terrestrial animals. The toxins are proteins with low or high molecular weight. Some are polyethers, lipids, amines, alkaloids, guanidine bases, steroids, phenols, halogenated compounds or mucopolysaccharides. But the chemical nature of many is not yet known. The toxins may be similar or dissimilar produced by different Animals. The venome provokes the simple effects, as vaso-constriction or dialation or some may have complex responses. Such as multiple concomitant changes in blood vascular dynamics or parasympathetic dysfunction. The venoms are complex substances having numerous pharmacological activities and synergistic reactions and are capable of inducing autopharmacological responses. It has different effects in total and after fractionation ie by individual fractions and seen that neurotoxin can and do have neurotoxic or haemotoxic activities or both; and haemotoxins can have other activities. It can be made clear on individual fraction of venome after isolating and studying separately or in combinations and by bioassay, clinical observation etc.

CLINICAL PROBLEMS

There are many injuries and deaths caused by stings and bites of Venomous animals and by ingestion of poisonous fishes but reliable stastical data is not available and not at all maintained in any country and such cases or deaths are often included under accidents, Poisonings, trauma or any other causes.

Any way there is tremendous scope for Research on the Animal toxins and their characterization, evaluation, utilization as biopotential material at different levels.

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IMPORTANCE OF CAUSATIVE FACTOR

There are many Approaches to a case but whatever approach we take to solve a case, if we are able to find the causative factor then our job becomes very easy. Prime and utmost important is given to the causation. There are 2 types of causative factors as mentioned in aphorism # 5 of the Organon.

- 1 Exciting cause
- 2 Fundamental causes

Now we all know that the exciting cause is very important in acute diseases but seldom have we given importance to it in the chronic diseases. It is very difficult to elicit the cause in chronic diseases because of the chronicity of the complaints and patients having short memory, but when the cause is elicited, arriving at the remedy becomes very easy. What we mean by cause is not superficial causes like injury or eating something cold or spoiled food etc. these can be only exciting cause, but the main causes like some strong emotions such as strong grief, or fear or some mortification. These causes can cause changes in the level of the neurotransmitters which arises from the limbic system, which

in turn disturbs the homeostasis of a patient and causes illness. Many remedies can have the same causes, so how do we differentiate different remedies having the same cause. After finding the cause the reaction of the constitution to that cause has to be ascertained and every remedy reacts in a different way and that reaction is what differentiates one remedy from the other having the same cause.

The fundamental cause in every case is the Miasm. The importance of miasm cannot be stressed enough. The right constitutional cannot be arrived at in any case without taking the miasm into consideration. Considering

the cause and then combining with the below mentioned approaches, arriving at the remedy becomes very easy. This case in this chapter is demonstration of how a cause such as long standing prolonged grief can cause a profound, serious life threatening disease such as Ischaemic heart disease and how homoeopathy can tackle problems of this sort with comparative ease and in a very gentle manner without any invasive treatment which in some cases ends in the patient losing his life at times. If he is lucky enough, he ends up being sick and under medication life long.



Do Homoeopaths use Cortisone?

INTRODUCTION: This question is raised often and again in Homoeopathy. We thought it would be useful for references to ask Dr Patwardhan for her article which appeared in the Sunday Observer.

Do homoeopaths use cortisone, a steroid? This question is often posed by some patients during the course of a consultation. The answer is a definite 'No'. Homoeopaths of integrity and commitment to their profession do not use cortisone and in fact have no need to. Their Materia Medica is very rich in remedies with a vast range of curative effects. I am an allopath who turned to homoeopathy after experiencing a personal cure for a minor but irritating ailment which allopathy was unable to cure. I then studied Homoeopathy and have been in homeopathic practice for the last 15 years. My only regret is that I did not study it earlier. Homoeopathy is a wonderful system of therapeutics and no one who has seriously studied it has ever doubted

its efficacy. Then why are people having doubts about the medicines being adulterated with cortisone?

When I posed this question to my patients who voiced their doubts, they said that either they or some friend had the medicines given by their doctors tested (in most cases very reputable doctors) and they tested positive for cortisone.

I try to reason with them with the following arguments:

1. If one has been on long term cortisone, one would show some side effects like Moon facies, weight gain, excessive body hair, osteoporosis, diabetes etc.
2. Cortisone is not a cure all for all the ills of the world.
3. Homoeopathic remedies have a very wide range of curative properties.
4. Using steroid would in fact be counter-productive as they would have a suppressive effect.

In view of this why should any Homoeopath resort to using cortisone?

Recently I had an occasion to test these allegations.

One of my old patients who had changed to another homoeopath nearer her home, telephoned me frantically to say that she had had her medicines checked and they tested positive for steroids. I decided to send some of my medicines to be tested at the same place.

