

USE OF BILE AS DRUG BY THE TRIBALS OF DEVIPATAN

REGION OF U.P.

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ABSTRACT: Fat of amphibians has great medicinal value. The tribals of Devipatan region of U.P. covering the districts of Gonda, Bahraich, Basti, Deoria, Faizabad and Gorakhpur, practice the use of amphibian fat for the treatment of various diseases.

Keywords: Amphibian fat, tribal, medicine

INTRODUCTION: Primitive tribes depend on nature for the treatment of various ailments. Their connection with nature is highly impressive. They depend on nature for all their needs, viz: food, shelter, and even medicine¹.

Art of healing by the use of various remedies of zoological origin have been reported by people since ages. Treatments by natural ways have been successful in treating a number of diseases². Contemporary society may be benefited from the experiences of tribal in treating various diseases.

Unexplored animal kingdom has proved to be rewarding in being a rich source of active substances. These substances find a number of uses – medicine, essential oils etc. The substances extracted from natural sources can be put use of in medicines. Extracting biologically active substances from plants and animals have been a boon to the modern medicine³. A lot of information about using animal products in treating various diseases has been highlighted in the paper.

Protein exuding from saliva of lizard can dilate blood vessels. Tail of several species of lizard contains aminoglycoside, which is used to treat bacterial infections and can heal sore throat, influenza, cough, inflammation and even tumor. Adipose tissue derivative, maintain

the tissue integrity by producing adipocytes. Adipose tissues contain 20% more eicosapentanoic acid as compared to that present in omega 3- fatty acid⁴. Omega 3-fatty acid helps in mobility across the membrane. They are more dynamic, so they allow a lot towards physiological function, concerned with the mobility of enzymes.

Bile salts are amphipathic, water-soluble end-metabolites of cholesterol that facilitate intestinal absorption of lipids, enhance proteolytic cleavage of dietary proteins, and exert potent antimicrobial activity in the small intestine. Bile salts are produced by every class of vertebrate animals and show substantial structural diversity across species. ⁽⁵⁻⁹⁾

The two basic structural components of bile salts are the 19-carbon (C19) steroid nucleus and a side-chain (Figure 1).

Figure 1:Cholesterol

C27 5 α bile alcohols are the dominant component of bile salts of lizards/snakes/tuatara (Lepidosauria). 24*R*-hydroxylation of C27 bile acids is a trait shared by some lizards(e.g., varanids) and the tuatara. There have been a number of innovations in bile salt synthesis in snakes relative to other reptiles including 23*R*-hydroxylation, 7-dehydroxylation, 16 α -hydroxylation, and production of C23 bile acids. lizards and snakes have primary bile salt consisting of approximately 100% C24 bile acids.⁽⁹⁻¹³⁾

Bile salt pattern	Animal	Comment
5 α bile acid	Lizard	Rare in vertebrates
16 α - Hydroxylation	Snakes	Common in snakes and birds
22-Hydroxylation	Turtle	turtles

MATERIALS and METHOD:

General population about district wise distribution of tribal was obtained from Tribal map of India. Information regarding the location, population and social culture was collected from the District and Block development officers. Interviews of tribal were taken from time to time, in various locations. Accurate information regarding the ways of using natural commodities for various diseases was taken from the society, from time to time and across varying location, so as to obtain authentic results. Where language was a problem, interpreters and translators were used, in this way, medico-ethnozoological data was collected.

Gall-bladder bile of various animals, was extracted with ethanol to yield bile salts which on TLC (silica gel G, n-butanol:acetic acid :water = 17: 2:1) gave a single bile alcohol. Various analytical methods were used to analyse bile salts. Thin layer chromatography (TLC), was helpful in identifying various bile salts. Samples were also identified by electrospray ionization mass spectrometry analysis. Gas chromatography mass spectrometry was helpful to get orientations of hydroxyl or hydrogen groups.

RESULTS:

Extracts of bile from various animals is used in medicine. The tribes of Tharu, Buksa and Mushar were interviewed for the information. The data in table 2 shows the name - zoological names of amphibian.

Common Name/Scientific Name	Parts used	Mode of application	Diseases
Bufo sps.	Bile	4-5 drops with water, empty stomach	Liver enlargement
Frog Rana sps.	Bile	Diluted with water and taken orally for 8-10 days	Jaundice, Liver,
Hyla sps.	Bile	Applied in dilute form in eye	Eye disease
Rachophorus sps	Bile	Applied over forehead	Hyperpyrexia
Labeo rohita sps.	Bile	Diluted with water and drunk, 10-12 days	Night blindness, weak eyesight

DISCUSSION:

Information given in this paper shows remarkable information regarding medicinal applications of various species of amphibians. Even in Charak Samhita, mention of animal fat is there, in treating various diseases. Literature survey shows that our knowledge of traditional drug is very small. Materia Medica mentions the names of only a dozen of animals. Joseph (1982)¹⁴ mentioned the use of a number of animals as traditional drug by various tribes of Madhya Pradesh. Maiti¹⁵ (1984) reported the use of animals as drugs from ethnozoological survey of Bihar. Literature did not show the medicinal application and mode of administration of some of the animals, which have been reported in this paper¹⁶.

Overall report claims that fat of amphibians is used in many Unani medicines too. It is used as ointment for external use in inflammation, muscular pain, piles, burns, wounds and sexual debility. Internally it is given to increase energy. Fats of male amphibians are effective in this purpose, compared to the fat of female amphibian.

In many countries, viz. China, Russia, Arab and Gulf countries, the people preserve the fat of amphibians in various forms. Unsaturated fatty acids affect the synthesis of endogenous microbial fatty acids (Palmitoleic acid and oleic acid) older the fat, more novel properties are developed. Chinese treat rheumatoid arthritis by massage with the fats from amphibians. Fat of amphibians release more energy compared to the fat from mammal, aves or pisces. Fat derived from amphibians are brought to medicinal use by the tribes and the details are discussed in the table 1.

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