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Veterinary traditional practice in Nigeria

M. A. Ibrahim
Veterinary Pharmacologist
Department of Veterinary Physiology and Pharmacology, Ahmadu Bello University

Abstract

Current veterinary therapy in Nigeria is suffering from both the scarcity and the high cost of drugs. Reduced funding for animal disease control programmes is likely to influence the incidence of some important animal diseases to the detriment of the nation's livestock sector. The danger exists that the cost of veterinary care may grow beyond the reach of the Nigerian livestock owner.

The easiest and most rational solution to the problem is to develop acceptably effective drugs from reasonably inexpensive sources for use as supplements to commercial drugs. Veterinary traditional medicine provides a shortcut to this end, and is more readily accessible for scientific investigation than its counterpart, traditional human medicine.

The importance of collecting baseline data about traditional practices is discussed, and examples are given of the traditional definitions of some important diseases of food animals, including streptothricosis, trypanosomiasis, helminthiasis, brucellosis and certain neuropathies, as well as the traditional treatments for these and other diseases. A method of standardizing the collection and analysis of ethno-veterinary medical information is proposed.

Introduction

Pharmacotherapy is one of the most important means of controlling animal diseases. In veterinary practice, the cost of treatment is important in determining the usefulness of a drug. Owing to current economic trends, the cost of veterinary care in Nigeria is becoming prohibitively high, while some drugs are not obtainable at all.

For example, the land area reclaimed from tsetse in Nigeria has declined from 7024 to 5404 and to 0.0 km² in 1982, 1983 and 1984 respectively due to reduced funding and increasing costs of insecticides and other vector control inputs (Jawonisi, 1984).

A practical solution to this problem is to develop acceptably effective drugs from reasonably inexpensive and locally available raw materials. The easiest and most traditional way of achieving this goal is through study of Nigeria's traditional veterinary and human medical practices, selecting from them those preparations that show promising results for development into drugs.

Successful use of herbal remedies in modern health care systems is being achieved in China, India and the Soviet Union (Obianwu, 1984). Serious efforts are being made in some African countries, including Nigeria, Ghana and Tanzania. However, very little is being done to exploit traditional medicine as it applies to veterinary practices, even though the integration of traditional remedies may be much easier in the veterinary than in the human medical field (Nwude and Ibrahim, 1980).

The branch of traditional medicine most amenable to scientific investigation is herbal medicine. Indications that studies of herbal remedies can yield fruitful results abound in the literature. A decoction of the plants Combretum mucronatum and Mitragyna stipulosa, used traditionally as a cure for guinea worm infestation in Ghana, is now considered the treatment of choice against the disease (Ampofo, 1977; Sofowora, 1982; Obianwu, 1984). Artemisinin, isolated from a herb used as an anti-malarial in Chinese human traditional medicine, is the drug of choice against cerebral malaria (Ekanem, 1983). Syrup xylopica is a pharmaceutically acceptable broad-spectrum antimicrobial preparation for use against infections of the bronchial system, and was developed from Xylopiya aethiopyca (Fiagbe, 1983).

Many international organizations, such as the World Health Organization, the United Nations Educational, Scientific and Cultural Organization, the Organization of African Unity, and the United Nations Industrial Development Organization, participate actively in the field of human traditional medicine (Sofowora, 1982). This is not true for veterinary traditional medicine, probably due to a lack of awareness of its existence and potential amongst the elite public and scientists. Moreover, professional traditional healers have contributed immensely through their associations and unions in kindling public interest to the level at which it leads to institutional participation. The absence of organized professional traditional veterinarians in Nigeria (Nwude and Ibrahim, 1980) is therefore an additional reason why traditional veterinary practices have not attracted as much attention.

Interest in veterinary traditional practices in Nigeria is now being generated by virtue of necessity. Both at the First National Conference on Tsetse and Trypanosomiasis Research in Nigeria (Kaduna, August 10-12, 1981), and at the Fifth International Symposium on Medicinal Plants (Ife, July 13-15, 1983), calls were made for studies on traditional antitrypanosomal herbs due to the dearth of new drugs against the disease and the resistance of trypanosomes against available antitrypanosomal agents. Recently ILCA supported a research programme on some aspects of veterinary traditional practices of the Fulani in Kaduna State, Nigeria. This paper reports on some of the findings, identifies some of the problems encountered and suggests aspects for further study and development.

A comparison of veterinary and human traditional medical practices

The veterinary and human aspects of traditional medicine are quite distinct from each other in terms of their practitioners, concepts, materials and the methods employed in Nigeria. Human traditional medicine is practiced mainly by professional traditional doctors or healers, who often rely on their practice exclusively for their livelihood. As a result, their knowledge is guarded jealously and is divulged usually only to close relatives, and their methods are shrouded in secrecy (Sofowora, 1982). By contrast, there are no such professional veterinary traditional healers. Instead, practices relating to particular animal species are tied closely to group occupations. Thus canine diseases and their like are known chiefly by hunters, while horse medicine is the domain of those in the service of the ruling families or owners of race horses; traditional food animals practices are the speciality of traditional herders like the Fulani, the Shuwa and the Koyam (cattle), or women (poultry) and men (small ruminants) among the settled farmers (Ibrahim et al, 1983; Ibrahim, 1984).

Within each of these various categories, information on the diseases and remedies of the respective animal species is allowed to diffuse freely. As a result, there is more uniformity in practices within a given community and far less secrecy and attendant mysticism. The collection of information by scientists should be much easier and the information collected more reliable than in the case of human traditional medicine.

Diseases of man are ascribed to five causes, namely physical, psychological, astral, spiritual and esoteric (Sofowora, 1982), of which only the first two are recognized by modern medicine. In veterinary traditional practice, on the other hand, the only animal diseases attributed to non-physical causes are those manifested by neurological signs, which are generically called daji by Fulani herders. These, in further contrast to human traditional medicine, are treated with drugs rather than with incantations and/or exorcism.

Human traditional medical practitioners rely almost exclusively on symptoms of diseases and sorcery as diagnostic tools. Fulani herdsmen, on the other hand, pursue sick animals to the butchers and thus have some knowledge of the gross pathology of some animal diseases. Indeed, a number of animal diseases are traditionally recognized and named after the principal organs observed to be affected after slaughter. Thus anthrax, contagious bovine pleuropneumonia (CBPP) and fascioliasis are called in Hausa saifa (spleen), ciwon huhu (disease of the lungs) and hanta (liver) respectively. Also, certain internal animal diseases are named after the causative agents which are observed grossly after slaughter. Some of the helminthic infections described below belong to this category. This additional advantage has contributed to a better understanding of animal diseases compared to human ailments.

Vernacular nomenclature of animal diseases

The lack of a standard glossary or dictionary has made the scientific interpretation of disease terms in the vernacular difficult and unreliable (Ibrahim et al, 1983; Ibrahim, 1984). Presently, ethno-veterinary information is collected and interpreted freely by investigators without conformity to any previously established standards. This situation is further confounded by the fact that the vernacular names of diseases and of plants vary widely amongst different settlements even in the same geographical area, as well as among different dialects or ethnic groups. As a result it is difficult to correlate information collected by different workers, or even by the same worker from different sources or areas. In addition, the results of scientific investigations into the efficacy of veterinary traditional medicines may not be correlated with their traditional uses or indications. This has the effect of reducing the value of using ethno-veterinary botanical information as a starting point in the study of medicinal plants.

Until an acceptable glossary is available investigators should state fully the traditional descriptions of the diseases whose traditional treatments they are reporting on. Such a glossary can meanwhile be prepared by a multidisciplinary team of investigators including clinicians, pathologists, pharmacologists, parasitologists, botanists, linguists and anthropologists.

The sample definitions given below were compiled principally from Fulani herdsmen living around the Zonkwa and Samaru areas of Kaduna State, and the terms reported are exhaustive neither for the geographical areas nor for the diseases covered.

Helminthic infections

Bu'd'di is a general Fulfulde term for gastro-intestinal helminthiasis. Based on their observations of the clinical signs and of slaughtered animals, the Fulani appear to have correctly identified all the common and important types of helminthic infections, and classified the condition according to aetiology and/or signs as follows:

1. Bu'd'di pammare is caused by round white worms, which inhabit the intestines and are often passed in the faeces of affected animals. Informants identified specimens of Heterakis spumosa from rats and Toxocara vitulorum from calves as pammare. This term can thus be interpreted to mean ascariasis.

2. Bu'd'di gyaju'di is caused by flat white worms which are also seen in the feces and in the intestines of affected animals. Samples of tapeworms from rodents (Inermicapsifer

congolensis and Hymenolepis spp.) were identified as gyaju'di by herdsman. This term obviously refers to cestodiasis.

3. Bu'd'di bu'deji is described as being caused by small reddish worms usually found attached inside the stomach of affected animals, and not seen in the faeces. The disease is associated with lokoje (oedematous swelling under the jaw) and is said by herdsman to be the most difficult to treat. Samples of hookworms (Heligomina thamnomysi) from rats were recognized by informants as bu'deji. The term bu'd'di bu'deji may thus be translated as haemonchosis or trichostrongylosis.

4. Balku is a more appropriate term for liver fluke infestation or fascioliasis than the Hausa hanta. Fulani informers described the disease as affecting ruminants and characterized by 'poor doing'. The disease has been associated with streams and lakes but not with snails. The aetiological agents are said to be motile and flat, and are seen in the livers of affected animals.

5. Hanta, on the other hand, is described as characterized by hyperaemia and discharges affecting the eyes in live animals, and a swollen liver in slaughtered animals. Some herdsman distinguished between a 'black' and a 'white' form of the condition, based on the colour of the liver of affected cattle. This distinction suggests haemorrhages or congestion for the former, and anaemia or necrotic changes for the latter. The cause of hanta was not known. The term hanta hitherto widely interpreted to mean fascioliasis, does not seem appropriate for that disease. Further studies are required to establish the meaning of hanta.

6. Goli is described as a disease of the young calf characterized by bloody diarrhoea. Worms were implicated as the cause of the disease by some informants. The term is usually freely translated to mean helminthiasis. Coccidiosis and bacterial enteritis should also be considered as possible translations.

7. Madara (the Hausa work for milk) is described by herdsman as a disease of very young calves characterized by diarrhoea or constipation and transmitted to the calf through the milk of the dam. The description is suggestive of toxocariasis or bacterial enteritis.

Diseases with neurological signs

It appeared from interviews with herdsman that most diseases with unknown (microscopic) causes and manifested by the neurological signs are referred to by the generic name daji. The causes are described by herdsman as related to iskoki, meaning 'the unseen' or 'spirits' (Abraham, 1958). All forms of daji are however treated without the aid of incantations or magical rites, suggesting the imputation of unknown physical causes.

The Fulani herdsman recognize three forms of daji:

1. Mu'du is characterized by 'earth-eating' and 'poor doing'. Earth from abandoned ant-hills is included in prescriptions used in treatment. This term may refer to any disease manifested by pica, for example mineral deficiencies.

2. Nauru is described as characterized by depression or stupor. One ear appears floppy, while the other remains erect. The affected animal seeks shade. It is said to be a killer disease. The term may have been derived from the Arabic word for 'light'. The condition called nauru by the herdsman may refer to photosensitization, although skin reactions were not mentioned by the informants.

3. Waire affects cattle and has a sudden onset. It is characterized by convulsions and recumbency. The herdsman stated that the affected animal may recover without treatment.

The description given was vague and could fit any of a number of diseases like cowdriosis, certain toxic reactions, etc.

Streptothricosis

Kirci, a Hausa word, is widely translated as streptothricosis. The Fulani describe kirci as a disease affecting the skin of cattle, and have associated it with ticks. They recognize three forms of kirci as follows:

1. Kirci mai she'ka: the lesions start as boils or papules, mostly on the tail and udder, and are difficult to treat.
2. Kirci mai dusa: this is manifested by crusty lesions, usually observed on the back. This is the form usually referred to simply as kirci, and is said to be easier to treat.
3. Bajale: this is said to be a form of kirci in which the lesions consist of long cutaneous outgrowths, which do not coalesce and which appear mostly on the face. This form is said to be difficult to treat.

These descriptions given by herdsmen are strongly reminiscent of the descriptions given for three of the four forms of streptothricosis by Mornet and Theiry (1955) as the nodular, the ickthyotic and the tumorous forms respectively.

Brucellosis

The term bakkale is used to denote a disease of cattle manifested by lameness and hygromas, and abortions in pregnant cows. It can be translated as brucellosis.

Trypanosomiasis

Sammore has been so extensively used to mean trypanosomiasis of cattle that it has come to be accepted as such. It has been described by some Fulani as a disease of cattle characterized by weakness, emaciation and inappetence, and caused by tsetse fly bites (Ibrahim et al, 1983). However, descriptions given by some herdsmen are vague, do not include the vector, and seem to fit most debilitating diseases. In some instances the following definition was given: A disease of cattle manifested by loss of weight and disturbed hair coat (this was said to show only in the afternoons), without any association with tsetse. It seems that the term means different things to different groups of herdsmen even in the same locality. Trypanosomiasis is therefore not the only translation.

Traditional control of animal disease

The scientific investigation of veterinary traditional practices is still embryonic, but it is already revealing some interesting facts. Fulani herders in Kaduna State often wash their hands in an infusion made from the leaves of Nelsonia campestris and Guiera senegalensis before collecting or handling drugs intended for treatment: the latter is now known to possess anti-microbial properties (Sokomba et al, 1983), a fact which would appear to justify its use.

Chemotherapy, chemoprophylaxis and preventive medicine are developed to an appreciable extent in veterinary traditional disease control systems in Nigeria. For example, the Fulani herders employ three types of drugs in the control of helminthic infections: those which kill worms (vermicides), those which only expel worms (vermifuges), and those which protect against infection (prophylactics). Four out of nine plants used as veterinary traditional anthelmintics for cattle by herdsmen in Kaduna State were found to be effective against experimental trichostrongyle infections. There were Aloe barteri, Terminalia avicennioides, Butyrospermum paradoxum, and Acacia albida (Ibrahim, 1984). The first two have recently

been tested against natural helminthic infections of sheep, for which they also appear effective (Ibrahim, unpublished data).

For most infectious diseases, the herders distinguish between therapeutic and prophylactic agents. For example, samore is treated with a combination of the root of Cochlospermum tinctorum and the seed of Anogeissus leiocarpus, or Cassythia filiformis, or a combination of bark from Khaya senegalensis and Pterocarpus erinaceus, while the latter is used alone for prevention.

Furthermore, the role of insects in the spread of diseases is fully appreciated by herdsmen. Hydrotherapy is sometimes employed to prevent insect bites. For example, cattle are bathed with an infusion of Sesbania aculeata before traversing a tsetse belt (Dalziel, 1937). Animal houses are also fumigated with herbs like Adansonia digitata, Guiera senegalensis (Dalziel, 1937), Citrus aurantifolia (Nwude and Ibrahim, 1980) or else the ash and/or pomade from certain plants may be applied externally, as with the tobacco plant (Dalziel, 1937; Nwude and Ibrahim, 1980).

Certain diseases are recognized by herdsmen as very difficult to treat. Kirci (streptothricosis) is one example. Indeed, most of the treatments for kirci consist of topical applications with oils from plants such as Butyrospermum paradoxum, Parkia clappertoniana (Nwude and Ibrahim, 1980), or with infusions like that of Fadogia agrestis. There are also some diseases for which herdsmen state that they know of no effective treatment. Rinderpest belongs to this category.

Magical uses of plants are sometimes encountered in veterinary traditional medicine. For example, abundant clustered fruits may suggest fertility, as with Ficus capensis. Also, many plants with thick leaves or milky juices are used as galactogogues because of their resemblance to the udder or milk. Pergularia tomentosa, some species of Euphorbia, Lactuca taraxaciflora and Picrus humilis probably belong to this category. Striga senegalensis is used in cases of poisoning resulting from excessive consumption of corn by virtue of its parasitic effect on corn. Heliotropium indicum is used to treat scorpion stings because the inflorescence resembles the scorpion sting.

On the other hand, certain diseases which are poorly understood by herdsmen are treated exclusively with herbal drugs. For instance, the neurological condition waire is treated with a combination of the leaf of Abrus precatorius and the root of Tamarindus indica, while ma'du is treated with Tapinanthus belvisii and earth from ant-hills.

Collection of information on veterinary traditional practice

Various methods of collecting information on medicinal plants used in human traditional medicine have been suggested (Sofowora, 1982). Owing to the differences between the two fields mentioned earlier, most of them are not appropriate and the rest need some modification before they can be applied to veterinary traditional practice.

To begin with, the source of the information to be consulted should be selected in accordance with the animal species the investigator desires information about, otherwise the information collected is at best incomplete.

Secondly, due account should be given to the description of the disease as well as to those diseases which informants think are similar, i.e. the traditional alternative diagnoses.

Thirdly, the information given depends entirely on the format of the enquiry. For example, if an investigator enquires about treatments for bu'd'di per se, it will not later be possible to

know whether the treatment is meant for cestodiasis, trichostrongylosis or ascariasis. Ignorance will result in falsely negative results if the medicament is tested against the wrong helminth model.

Information should also be collected on the biography of the informant. Biography is important, especially when consulting Fulani herdsman, as their vernacular names for diseases and the plants used in treatments may depend on their contact with people far away from their present area of habitation. For instance, of 30 plants on which information was collected from herdsman living in Kaduna State, only 11 could be collected for identification because the herdsman said the plants were available only in former settlements (Ibrahim, 1984), which sometimes included other countries.

The flow chart shown as Figure 1 can be used as a guideline for collecting and analysing information on veterinary traditional practice.

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References

- Abraham, R.C. 1958. Dictionary of the Hausa Language. Hodder and Stoughton, London.
- Ampofo, O. 1977. Plants that heal. World Health, November 26-30, 1977. In: Helminthological Abstracts 47(6): 247.
- Dalziel, J.M. 1937. The useful plants of West tropical Africa. Crown Agents, London.
- Ekanem, O.J. 1983. Anti-malarial activities of selected plants. Paper presented at the Fifth International Symposium on Medicinal Plants, Ife, July 13-15.
- Fiagbe, N.I.Y. 1983. Syrup xylopica. Paper presented at the Fifth International Symposium on Medicinal Plants, Ife, July 13-15.
- Ibrahim, M.A. 1984. Evaluation of the activities of some African traditional anthelmintic herbs against Nippostrongylus braziliensis in rats. M.Sc. thesis, Department of Veterinary Physiology and Pharmacology, ABU, Zaria, 119pp.
- Ibrahim, M.A., Nwude, N., Aliu, Y.O. and Ogunsusi, R.A. 1983. Traditional concepts of animal disease and treatment among Fulani herdsman in Kaduna State, Nigeria. ODI Pastoral Network Paper 16©: 1-6.
- Jawonisi, I.E. 1984. Effect of reduced funding on vector control. Paper presented at the Eighth Conference of the Nigerian Society for Parasitology, Zaria, September 26-29.
- Mornet, P. and Theiry, G. 1955. Bulletin of Epizootic Diseases in Africa 3: 302.

Nwude, N. and Ibrahim, M.A. 1980. Plants used in traditional veterinary medical practice in Nigeria. Journal of Veterinary Pharmacology and Therapeutics 3:261.

Obianwu, H.O. 1984. Traditional medicine and drug development in Nigeria. ABU, public lecture, Zaria, May 30, 35pp.

Sofowora, A. 1982. Medicinal plants and traditional medicine in Africa. John Wiley and Sons, Chichester, 256pp.

Sokomba, E.N., Onaolapo, J.A. and Olatoye, E. 1983. Antimicrobial properties of Guiera senegalensis. Paper presented at the Fifth International Symposium on Medicinal Plants, Ife, July 13-15.