Botany Research International 8 (4): 77-81, 2015
ISSN 2221-3635

DOI: 10.5829/idosi.bri.2015.8.4.12823

Ethnomedicinal Antiepileptic Plants Used in Parts of Oyo and Osun States, Nigeria

O.M. Wahab

Department of Forest Technology, Federal College of Forestry, Ibadan, Nigeria

Abstract: Despite the relatively high prevalence of epilepsy in Nigeria, most of the patients do not have access to allopathic drugs. Others often default in continuing the therapy, or seek traditional methods of treatment. A survey of plants used in treating epilepsy was carried out in ten major markets of Oyo and Osun States, Nigeria. Sixty-two plants belonging to thirty-six families were collected. The families Fabaceae, Apocynaceae and Annonaceae had the highest number of antiepileptic species. Eight plants including *Xylopia aethiopica, Alstonia boonei* and *Lannea welwitschii* occurred frequently in the fourteen recipes recorded. Stem barks constituted 55% of the plant parts used in the formulations and the implication of this for conservation of the plants discussed. The phytomedicines were administered, mostly as decoctions and only two as charred residues.

Key words: Epilepsy · Ethnomedicinal plants · Oyo & Osun States · Nigeria

INTRODUCTION

Epilepsy is a chronic disorder of the central nervous system of various etiologies and characterized by recurrent seizures due to excessive discharge of neurons in the brain [1]. In their opinion, Scott *et al*. [2] stated that epilepsy is one of the most common neurological disorders worldwide with serious physical, psychological, social and economic consequences for the persons affected and their families. About 50 million people worldwide have epilepsy with an annual incidence of 20-70 cases per 100,000 people [3]. According to Osuntokun [4], epilepsy is the most common non-infectious neurologic disease in developing African countries including Nigeria and it remains a major medical and social problem. In Nigeria, prevalence of epilepsy based on defined communities has been estimated to be 15 to 37 per 1000 people [5]. However, Longe and Osuntokun [6] reported a prevalence rate of 6.2 per 1000 among the residents of Udo, a rural community of Edo-speaking people in Nigeria. On age distribution, Osuntokun [4] reported that between 70% and 85% of people living with epilepsy (PWE) have onset seizures below 30 years of age. Obembe and Ahmed [7] who studied epilepsy in Kaduna, Northern Nigeria, reported that children over 5 years of age had epilepsy, prevalence of 82%. Among adult Nigerians, Ogunniyi *et al* [8] reported a mean age of 21 years with dominance of partial seizures.

Traditionally, Nigerians believe that epilepsy is infectious [9]. Earlier reports in Nigeria painted a gloomy picture of epilepsy as a dreadful disease inflicted on victims by the devil and transmitted from one patient to another via saliva. Osuntokun and Odeku [9], observed from their review of 522 Nigerian epileptic cases that the patients suffered psychosocial handicaps including a suicidal tendency because they considered epilepsy as a social disgrace.

Although numerous antiepileptic allopathic drugs are available worldwide, WHO [10] reported that in Africa 80% of people living with epilepsy are not treated with the readily available modern drugs. As stated by Olubunmi [11] the drugs may cause toxic side effects, may produce complex psychosocial consequences and require continual medical supervision of the patient. Drug compliance is another problem, Ogunniyi *et al*. [8] reported that among 345 adult Nigerians with epilepsy only 25.5% complied with therapy, while 107 patients defaulted. They added that some PWE in Nigeria seek alternative treatment methods. Indeed Danesi and Adetunji [12] reported a 47.6% usage of African traditional medicine for epilepsy and 24.1% combined usage of traditional and spiritual methods.

Corresponding Author: Olasumbo M. Wahab, Department of Forestry Technology, Federal College of Forestry, Ibadan, Nigeria.

The present study was aimed at providing information on the indigenous phytoantiepileptic remedies as well as their preparation and administration, thus engendering further studies on the plants.

MATERIALS AND METHODS

Some herbalists and traditional medicinal practitioners were visited in Oyo and Osun States. They were interviewed on their knowledge of antiepileptic plants. Recipes were purchased from herb sellers in major markets in the two southern states. In Ibadan, Oje, Oja-Oba, Alesinloye, Mokola, Bode and Oranyan markets were visited. Akesan market was visited in Oyo town. In Osun State, Oja-Oba market, in Oshogbo, Oja-Alamisi in Ikirun and Enuwa market in Ife were all visited. In these markets, the herb sellers who were mostly women were questioned on their knowledge of the management and treatment of epilepsy. Names of the medicinal plants constituting the recipes were given in local names (Yoruba) and the mode of preparation and dosage provided.

The plant materials (stem barks, roots, leaves, fruits and seeds) collected, were labelled and taken to Forestry Herbarium Ibadan (FHI) as well as the University of Ibadan Herbarium (UIH) for identification and authentication.

RESULTS AND DISCUSSION

Sixty-two plants belonging to thirty-six families were collected as plants having antiepileptic properties (Table 1). Plant parts used in the recipes were stem bark, seeds, stem, leaves, root, bulb, flower and rhizome. Stem barks constituted 55% of the prescriptions. All the recipes were made up of multiple plants, except two mono-prescriptions. Although most of the recipes were prepared by decoction only two were by charring the plant materials.

Recipes for Epilepsy:

1. *Lannea welwitschii, Xylopia aethiopica, Alstonia boonei, Gongronema latifolium, Terminalia superba, Momordica charantia, Euphorbia lateriflora, Gossypium barbadense, Khaya grandifoliola, Parquetina nigrescens, Morinda lucida*.

Preparation: A decoction is prepared using the varied parts of the herbs. For adult; half a tumbler (200mls) to be taken three times daily. Children: Two tots to be taken three times daily.

2. *Xylopia aethiopica, Alstonia boonei, Gongronema latifolium, Ceiba pentandra, Detarium microcarpum, Pteleopsis suberosa, Entandrophragma angolense, Acacia nilotica, Okoubaka aubrevillei.*

Preparation: A decoction is prepared. Nine *Xylopia atheiopica* fruits are used for a male patient and seven if female. Some of the extract is used for bathing daily and one tumbler is taken once daily.

3. *Crinum jagus, Xylopia aethiopica, Griffonia simplicifolia, Pteleopsis suberosa, Terminalia superba, Trichilia heudelotii, Chasmanthera dependens, Pycnanthus angolensis, Olax subscorpioidea, Carpolobia lutea.*

Preparation: Cut the plant materials into pieces and soak in potable water for three days. Part of the extract is to be used for bathing daily. One tumbler full is taken two times daily.

4. *Lannea welwitschii, Xylopia aethiopica, Alstonia boonei, Harungana madagascariensis, Anthocleista djalonensis, Khaya grandifoliola, Parquetina nigrescens, Olax subscorpioidea.*

Preparation: A decoction or cold water extract with is prepared. Dosage is one tea cup to be taken three times daily.

5. *Euphorbia kamerunica, Hymenocardia acida, Oxytenanthera abyssinica, Syzygium guineense, Securidaca longepedunculata, Nicotiana tabacum*.

Preparation: A decoction is prepared. Dosage is half a tumbler two times daily. Patient should not take okra soup throughout the period of treatment.

6. *Rauvolfia vomitoria, Daniellia oliveri, Xylopia aethiopica, Danellia oliveri, Phyllanthus muellerianus, Lophira alata, Microdesmis puberula, Morinda lucida, Citrus sinensis, Lecaniodiscus cupanioides*.

Table 1: Antiepiletic plants, families and parts used

S/N	Botanical names	Family	Local names	Parts used
1.	*Acacia nilotica* (Linn.) Wild ex Del.	Fabaceae	Bonni	Seeds
2.	*Aerva lanata* (Linn.) Juss ex Schult	Amaranthaceae	Ewe aje	Leaves
3.	*Alstonia boonei* De Wild.	Apocynaeae	Ahun	Stem bark
4.	*Alternanthera repens* (Linn.) Link.	Amaranthaceae	Dagunro	Leaves
5.	*Anthocleista djalonensis* A. Chev.	Loganiaceae	Sapo	Stem
6.	*Berlinia grandiflora* (Vahl) Hutch. & Dalz.	Fabaceae	Apado	Stem bark
7.	*Calliandra portoricensis* (Jacq.) Benth.	Fabaceae	Tude	Root
8.	*Carpolobia lutea* G. Don	Polygalaceae	Osunsun	Stem bark
9.	*Ceiba pentandra* (Linn.) Gaertn.	Bombacaceae	Ponpola	Stem
10.	*Chasmanthera dependens* Hochst.	Menispermaceae	Atoo	Stem bark
11.	*Chenopodium ambrosioides* Linn.	Chenopodiaceae	Ewe imi	Leaves
12.	*Citrus sinensis* (Linn.) Osbeck	Rutaceae	Osan mimu	Stem bark
13.	*Clausena anisata* (Wild) Hook.f.ex. Benth	Rutaceae	Agbasa	Stem bark
14.	*Cochlospermum tinctorium* A. Rich	Cochlospermaceae	Feru	Stem bark
15.	*Curculigo pilosa* (Schum. & Thonn.) Engl.	Hypoxidaceae	Epakun	Rhizome
16.	*Crinum jagus* (Thom.) Dandy	Amaryllidaceae	Ogede odo	Bulb
17.	*Daniella oliveri* (Rolfe) Hutch. & Dalz.	Fabaceae	Iya	Stem bark
18.	*Detarium microcarpum* Guill. & Perr.	Fabaceae	Arira	Stem bark
19.	*Entandrophragma angolense* (Welw.) CDC.	Meliaceae	Jebo	Stem bark
20.	*Eugenia aromatica* Linn.	Myrtaceae	Kannafuru	Floret
21.	*Euphorbia kamerunica* Pax.	Euphorbiaceae	Oro agogo	Stem
22.	*Euphorbia lateriflora* Schum. & Thonn.	Euphorbiaceae	Enu opiri	Stem
23.	*Funtumia elastica* (Preuss) Stapf	Apocynaceae	Ire	Stem bark
24.	*Gongronema latifolium* Benth.	Asclepiadaceae	Madunmaro	Leaves
25.	*Gossypium barbadense* Linn.	Malvaceae	Kerewu	Seeds
26.	*Griffonia simplicifolia* (Vahl. Ex DC) Baill.	Fabaceae	Tapara	Stem
27.	*Harungana madagascariensis* Lam. Ex. Poir	Hypericaceae	Amuje	Stem bark
28.	*Hymenocardia acida* Tul.	Euphorbiaceae	Orupa	Stem bark
29.	*Khava grandifoliola* C.DC	Meliaceae	Oganho	Stem bark
30.	*Lannea welwitschii* (Hiern) Engl.	Anacardiaceae	Opon	Stem bark
31.	*Lecaniodiscus cupanioides* Planch, ex. Benth.	Sapindaceae	Akika	Stem bark
32.	*Lophira alata* (A. chev.) Burtt. Davy	Ochnaceae	Ponhon	Stem bark
33.	*Mangifera indica* Linn.	Anacardiaceae	Mangoro	Stem bark
34.	*Microdesmis puberula* Hook. F. ex Planch.	Euphorbiaceae	Apata	Stem
35.	*Milicia excelsa* (Welw.) Benth.	Moraceae	Iroko	Stem bark
36.	*Momordica charantia* Linn.	Cucurbitaceae	Ejirin	Leaves
37.	*Monodora myristica* (Gaertn.) Dunal	Annonaceae	Arigho	Seeds
38.	*Morinda lucida* Benth.	Rubiaceae	Oruwo	Stem bark
39.	*Nicotiana tabacum* Linn.	Solanaceae	Taba	Leaves
40.	*Okoubaka aubrevillei* Pellegr. & Norm.	Octoknemataceae	Igi nla	Stem bark
41.	*Olax subscorpioidea* Oliv.	Olacaceae	Ifon	Stem bark
42.	*Oxytenanthera abyssinica* (A. Rich.) Munro	Poaceae	Aparun	Stem
43.	*Parguetina nigrescens* (Alzel.) Bullock	Periplocaceae	Ogbo	Leaves
44.	*Paullinia pinnata* Linn.	Sapindaceae	Kakansela	Leaves
45.	*Phvllanthus muellerianus* (O. Ktze.) Exell	Euphorbiaceae	Arunjeran	Root
46.	*Picralima nitida* (Stapf.) Th. & H. Dur.	Apocynaceae	Abere	Seeds
47.	*Piper guineense* Schum. & Thonn.	Piperaceae	Iyere	Seeds
48.	*Pseudocedrela kotschvi* (Schweinf.) Harms.	Meliaceae	Emigbegiri	Stem bark
49.	*Pteleopsis suberosa* Engl. & Diels.	Combretaceae	Okuku	Stem bark
50.	*Pycnanthus angolensis* (Welw.) Warb.	Myristicaceae	Akomu	Stem bark
51.	*Rauvolfia vomitoria* Afzel.	Apocynaceae	Asofeyeje	Stem bark
52.	*Sarcocephalus latifolius* Sm. (Bruce)	Rubiaceae	Egbesi	Stem bark
53,	*Securidaca longepedunculata* Fres.	Polygalaceae	Ipeta	Stem bark
54.	*Spathodea campanulata* P. Beauv.	Bignoniaceae	Oruru	Stem bark
55.	*Syzygium guineense* (Willd.) DC.	Myrtaceae	Adere	Stem bark
56.	*Terminalia superba* Engl. & Diels.	Combretaceae	Afara	Stem bark
57.	*Tetrapleura tetraptera* (Schum. & Thonn.) Taub.	Fabaceae	Aidan	Fruit
58.	*Trichilia heudelotii* Planch. Ex. Oliv.	Meliaceae	Rere	Stem bark
59.	*Uraria picta* (Jacg.) DC	Fabaceae	Alupayida	Leaves
60.	*Uvaria afzelii* Sc. Elliot	Annonaceae	Gbogbonise	Stem bark
61.	*Vitellaria paradoxa* Gaertn. F.	Sapotaceae	Emi	Stem bark
62.	*Xylopia aethiopica* (Dunal) A. Rich.	Annonaceae	Eeru	Fruit

Preparation: Decoction of whole recipe is prepared and part of extract used for bathing daily. Dosage is half a glass cup to be taken three times daily.

7. *Lannea welwitschii, Xylopia aethiopica, Funtumia elastica, Spathodea campanulata, Ceiba pentandra, Terminalia superba, Harungana madagascariensis, Khaya grandifoliola, Tetrapleura tetraptera, Lophira alata, Parquetina nigrescens, Carpolobia lutea, Morinda lucida, Paullinia pinnata.*

Preparation: A decoction is prepared. Nine *Xylopia aethiopica* fruits are to be used for a male patient and seven if female. Adults are to take half a glass cup three times daily and once daily for children.

8. *Aerva lanata, Uvaria afzelii, Xylopia aethiopica, Microdesmis puberula, Carpolobia lutea, Clausena anisata, Lecaniodiscus cupanioides*.

Preparation: Decoction is prepared with small quantity of natron (Kaun). Dosage is one glass cup to be taken three times daily.

9. *Lannea welwitschii, Monodora myristica, Xylopia aethiopica, Alstonia boonei, Picralima nitida, Pteleopsis suberosa, Euphorbia lateriflora, Harungana madagascariensis, Acacia nilotica, Milicia excelsa.*

Preparation: A decoction is prepared and dosage is one glass cup to be taken two times daily.

10. *Crinum jagus, Xylopia aethiopica, Griffonia simplicifolia, Pteleopsis suberosa, Anthocleista djalonensis, Gossypium barbadense, Pseudocedrella kotschyi, Chasmanthera dependens, Carpolobia lutea.*

Preparation: A decoction or cold water extract is prepared. Dosage is one tea cup to be taken early in the morning once daily.

11. *Uvaria afzelii, Daniella oliveri, Terminalia superba, Mangifera indica, Calliandra portoricensis, Eugenia aromatica, Piper guineense, Securidaca longepedunculata, Vitellaria paradoxa, Curculigo pilosa.*

Preparation: A cold water extract is prepared for three days. Dosage is two tablespoons to be taken two times daily.

12. *Xylopia aethiopica, Pteleopsis suberosa, Harungana madagascariensis, Tetrapleura tetraptera, Microdesmis puberula, Parquetina nigrescens, Sarcocephalus latifolius, Citrus sinensis, Lecaniodiscus cupanioides.*

Preparation: Decoction is prepared. Dosage is one glass cup to be taken in the morning once daily.

13. *Alternanthera repens.* The leaves are charred in an earthen pot. Dosage is one teaspoonful of charred material to be taken with hot pap once daily.

14. *Uraria picta.* The leaves are charred in an earthen pot. Dosage is one teaspoonful of the charred material to be taken with cold pap (maize pudding) once daily.

As reported by the Food and Agricultural Organization (FAO), [13] a large percentage of Africans depend on medicinal plants for healing. Generally, traditional medicinal practices are still important component of everyday life in many regions of the world [14]. In Nigeria, Sofowora [15] reported that 80% of the populace has no access to modern medicine and depend largely on medicinal plants. Taking cognizance of the report of WHO [10] that 80% of people living with epilepsy in Africa are not treated with modern drugs, the documentation of ethnoantiepiletic plants in this study is quite significant.

Of the sixty-two plants collected, eight species occurred 3-9 times in the 14 recipes recorded. These are *Xylopia aethiopica, Lannea welwitschii, Alstonia boonei, Carpolobia lutea, Pteleopsis suberosa, Khaya grandifoliola, Lecaniodiscus cupanioides* and *Chasmanthera dependens*. Adodo [16] prescribed the decoction of *A. boonei* root with a few other plants for the treatment of epilepsy. Iwu [17] stated that a decoction of the leaves of *Alstonia boonei* and the fruits of *X. aethiopica* is used to bathe children as an anticonvulsant. *Tetrapleura tetraptera, Calliandra portoriocensis* and *X. aethiopica* all of which are in Table 1, are the main plants whose decoction is an important remedy for convulsions [17]. The dry fruit of *T. tetraptera* is used as a spice in Nigeria. Nwaiwu and Akah [18] reported that the volatile

oil from the fruit of *T. tetraptera* showed anticonvulsant activity and Ojewole [19] demonstrated analgesic and anticonvulsant properties of fruit aqueous extract of *T. tetrapleura* in mice and suggested that the anticonvulsant activity of the extracts could be linked to their ability to depress the central nervous system. Fabaceae had the highest number of antiepileptic plants followed by Apocynaceae and then Annonaceae. The preparations of almost all of the recipes were by decoction which could be drunk and/or used for bathing. That stem bark constituted 55% of the plant parts used in the recipes has implication for the conservation of the species. Since stem barks re-grow after debarking, predominantly using stem barks instead of the roots will enhance their survival in the wild.

The leaves of two monoprescriptions, *Alternanthera repens* and *Uraria picta* are to be charred and then taken (teaspoonful) with maize pudding (pap) for treating epilepsy. Charring a common form of medicinal preparation in southern Nigeria is a process of converting fresh or dried organic plant material into inorganic form. Egunyomi *et al*. [20], who studied charring of medicinal plants concluded that charred materials could be therapeutically effective because of their mineral constituents and not phytochemicals which did not survive the charring process.

Presumably, the list of antiepileptic plants in this study will be useful for pharmacologists and other basic medical scientists who may wish to undertake further research and produce novel antiepileptic phytomedicines.

REFERENCES

1. Gaustaut, H., 1973. Dictionary of Epilepsy 1. Definitions. World Health Organization, Geneva. pp: 75.
2. Scott, R.A., S.D. Lhatoo and J.W.A.S. Sander, 2001. The treatment of epilepsy in developing countries. Bull WHO 78(4). Geneva.
3. Shovon, S.D., 1990. Epidemiology, classification, natural history and genetics of epilepsy. Lancet, 336: 83-6.
4. Osuntokun, B.O., 1978. Epilepsy in Africa. Trop. Geog. Med., 31: 24-31.
5. Reynolds, E.H., 1988. Historical Aspects In Epilepsy, Behaviour and Cognitive Function. John Wiley Medical Publication pp. 3-8 (Trimble, M.R. and Reynolds E.W. ed).
6. Longe, A.C. and B.O. Osuntokun, 1989. Prevalence of neurological disorders in Udo, a rural community in Southern Nigeria. Trop. Geog. Med., 41(1): 36-40.
7. Obembe, A. and M.H. Ahmed, 1988. Epilepsy in Kaduna; a study of 164 youths. Nig. Med. Pract., 16(2): 45-8.
8. Ogunniyi, A., O.S. Oluwole and B.O. Osuntokun, 1998. Two year remission in Nigerian epileptics. East Afr. Med. J., 75(7): 392-5.
9. Osuntokun, B.O. and E.L. Odeku, 1970. Epilepsy in Ibadan, Nigeria: a study of 522 cases. Afr. J. Med. Sci., 1: 175-200.
10. World Health Organization (WHO) 2004. Epilepsy in the WHO African Region: bridging the gap.
11. Olubunmi, A.O., 2006. Epilepsy in Nigeria - A review of etiology, epidemiology and management. Benin Journal of Postgraduate Medicine, 8(1): 27-51.
12. Danesi, M.A. and J.B. Adetunji, 1994. Use of alternative medicine by patients with epilepsy: a survey of 265 epileptic patients in a developing country. Epilepsia, 35(2): 344-51.
13. Food and Agricultural Organization 1993. Harvesting nature's diversity. World Food Day, 16 October, 1993.
14. Bussmann, R.W. and D. Sharon, 2006. Traditional plant use in Northern Peru: Tracking two thousand years of health culture. J. Ethnobiology and Ethnomedicine, 2: 47.
15. Sofowora, E.A., 2008. Medicinal plants and Traditional Medicine in Africa 3rd Edition Spectrum Books Ltd. Ibadan, Nigeria. pp: 439.
16. Adodo, A., 2004. Nature Power. (3rd Edition). pp: 288.
17. Iwu, M.M., 1993. Handbook of African Medicinal Plants. CRC Press Inc. Boca Raton, U.S.A pp: 435.
18. Nwaiwu, J.I. and P.A. Akah, 2006. Anticonvulsant activity of the volatile oil from the fruits of *Tetrapleura tetraptera*. Journal of Ethnopharmacology, 18(2): 103-107.
19. Ojewole, J.A., 2005. Analgesic and anticonvulsant properties of *Tetrapleura tetraptera* Taub. (Fabaceae) fruit aqueous extract in Mice. Phytotherapy Research, 19(12): 1023-1029.
20. Egunyomi, A., T.R. Fasola and O. Oladunjoye, 2005. Charring medicinal plants: a traditional method of preparing phytomedicines in southwestern Nigeria. Ethnobotany Research and Applications 3: 261-265.