AN INVESTIGATION ON ANTI-DIABETIC MEDICINAL PLANTS USED BY THE HALAM TRIBE OF CACHAR DISTRICT OF SOUTHERN ASSAM, INDIA

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ABSTRACT

The Halam people of Cachar are accustomed to a wide variety of medicinal plants used in their herbal medicinal practices. A field study carried out on some Halam villages of Cachar district and reported 20 nos. of plant species are used traditional treatment for diabetics. Most plants are very effective remedy when used in a combination or singly. The present study through light on the traditional knowledge of the Halam peoples regarding medicinal plants which can be used against diabetics.

KEYWORDS: Diabetics, Traditional knowledge, Halam, Cachar

INTRODUCTION

At the confluence of the Indo-Malayan, Indo-Chinese and Indian bio geographical realms, the North-East region is unique in providing a profusion of habitats, which feathers, diverse biota with a high level of endemism. The region is also abode of approximately 225 tribes in India out of 450 in the country, the culture and customs of which have an important role in understanding biodiversity conservation and managements issues (Irshad, et al., 2003).

The name “Cachar” has derived from the Dimasa word “Kachari”. The district headquaters are located at Silchar. The name Cachar traces its origin to the Kachari kingdom. The district head quaters, Silchar is one of the most important business centres of Assam. In 2006 the Indian Govt. named Cachar one of the country’s 250 most backward district out of a total 640.

Cachar district occupies an area of 3,786 square Kilometers (1,462 Sq. Mil). The Barak is the main river of the district and apart from that there are numerous small river which flow from Dima Hasao District, Manipur or Mizoram. The district is mostly made up of plains, but there are a number of hills spread across the district. Cachar receives an average annual rainfall of more than 3,000 mm. the climate is tropical wet with hot and wet summers and cool winters. Climate of Cachar district is significant for excessive humidity and being...
surrounded by ranges of hills on the North, East and South of the district. Heat during summer time is unbearable because of humidity. The air is surcharged with moisture and rainfall is extremely heavy. The winter season is not so cold like other states of India. The actual rainy season starts from May and remains up to October.

Population census 2011, Cachar had population of 1,736,617 of which male and female were 886,284 and 850,333 respectively. In 2001 census, Cachar had a population of 1,444,921 of which males were 743,042 and 701,879 were females. Cachar district population constituted 5.57% of total Maharashtra population. In 2001 census, this figure for Cachar district was at 5.42% of Maharashtra population. Average literacy rate of Cachar in 2011 were 79.34 compared to 67.82 of 2001. If things are looked out at gender wise, male and female literacy were 84.78 and 73.68 respectively.

The vegetation is mostly tropical evergreen and there are large tracts of rainforests in the northern and Southern parts of the district, which are home to Tiger, Asian elephants, Hoolock gibbon, gaur etc. The forests of Cachar were once rich in wildlife but now vanishing due to human onslaught. Rare species found are Hoolock gibbon, Phayre’s leaf monkey, Pig-tailed macaque, Stump failed macaque, Masket finfoot, White winged wood Duck etc., have been recorded. The Southern part was also recommended as “Dhaleswari” wild life Sanctuary. Barail is the only wildlife Sanctuary of the district as well as Barak Valley region. it was initiated by noted naturalist Dr. Anwaruddin Choudhury in early 1980s. this Sanctuary was ultimately notified in 2004.

Diabetes is a disorders that affects the way our body uses food for energy. Normally, the sugar we take in is digested and broken down to a simple sugar, known as glucose, glucose is the main source of fuel for the body. The pancreas automatically produces the right amount of insulin to move glucose from blood into our cells. In people with diabetics however, the pancreas either little or no insulin or the cells do not respond appropriately to the insulin that is produced glucose builds up in the blood, overflows into the urine and passes out of the body in the urine. Thus, the body loses its main source of fuel.

The indigenous Indian system of medicine good number of plants was mentioned for the cure of diabetes and some of them have been experimentally evaluated and active principle were isolated. WHO (1980) has also recommended the evaluation of the effectiveness of plants conditions where there are no safe modern drugs. The ethno botanical information reports state that about 800 plants may possess anti-diabetic potential. Diabetes is associated with long term damage such as malfunction of eyes, kidneys, nerves, heart and
blood vessel. It has been predicted that by the year 2025, more than 75% of people with diabetes will reside the developing countries (Modak, M., et al., 2007). Therefore, has been growing interest in the ethnobotanical approach to examine the anti-diabetic properties of plants traditionally used by the ethnic groups in different parts of the world. In view of its medicinal importance, the present study was focused to know the traditional medicinal plants wealth that is being used by the Halam tribal people of Cachar district against diabetes.

MATERIALS AND METHODS:

A systematic ethnobotanical survey was carried out in different Halam villages of Hailakandi district during 2011-2012 for collection of information as well as plants was collected from the local elderly people and kabiraj from the study area. The information for Ethnobotanical purposes were recorded on field data book and specimens are also collected then identified using the standard approaches and methodologies were followed as suggested by (Jain, 1987, 1989), Flora of the presidency of Madras (Gomble, 1935) and Bengal Plants (Prain, 1963). Queries have been repeatedly taking and asking help from interpreters for confirmation of data on each medicinal plant. For identification of the collected plants several floras and monographs have been consulted such as Flora of British India (Hooker, 1872-1897), Flora of Assam, vol. I-IV (Kanjilal, et. al., 1934, 1938, 1939 and 1940), Flora of Tripura (Deb, 1981, 1983).

RESULTS AND DISCUSSION:

A total of 20 medicinal plant species belong to 17 families were found to be used by the Halam people of the study area for their treatment of diabetes. It was observed that the plant parts used for the treatment included leaves, stems, barks, fruits and seeds as well as whole plant. Almost all the plant or part extracts were found to be prepared in aqueous solution and were consumed during in the early morning in empty stomach. During survey it was also learned that the traditional knowledge regarding, ethnomedicine is declining as there is no documentation. The knowledge is passed down from generation to generation only by means of verbal communication. The traditional practioners believed that knowing these medicinal plants by many other common people may reduce the effectiveness of the systems and thus they keep it secret among themselves.

The botanical names, family, local name, parts used, mode of traditional formulation are as follows:
1. *Aegle marmelos* (L.) Correa.
   - **Family:** Rutaceae.
   - **Local name:** Belrah.
   - **Parts used:** Leaves.
   - **Traditional uses:**
     The leaf powdered mixed with considerable amount of milk then taken orally for once a day.

2. *Aloe barbadensis* Mill.
   - **Family:** Liliaceae
   - **Local name:** Gritikumari.
   - **Parts used:** Leaf juice.
   - **Traditional uses:**
     The leaf juice taken orally before food twice a day for controlling the diabetes.

   - **Family:** Annonaceae.
   - **Local name:** Mortai.
   - **Parts used:** Leaves.
   - **Traditional uses:**
     The leaf were grinded and the extracts were obtained by squishing. The extract is then filtered and used 2-3 tea spoon daily early morning.

4. *Andrographis paniculata* (Burm.f.) Wallich ex Nees
   - **Family:** Acanthaceae.
   - **Local name:** Chirota.
   - **Parts used:** Whole plant.
   - **Traditional uses:**
     Whole plant extract (1 teaspoon) taken orally in empty stomach in the morning before meal used for control of diabetic.

5. *Ipomoea batata* (L.) Lam.
   - **Family:** Convolvulaceae.
   - **Local name:** Kolomi.
   - **Parts used:** Young leaves.
   - **Traditional uses:**
     The young fresh leaves boiled then taken orally once a day regularly.
6. *Catharantus roseus* (L.) G. Don.
   - **Family**: Apocynaceae.
   - **Local name**: Noyantara.
   - **Parts used**: Leaves.
   - **Traditional uses**:
     Leaves extract or fresh leaves may be chewed and juice in empty stomach.

7. *Centella asiatica* (L.) Urban
   - **Family**: Apiaceae.
   - **Local name**: Perup.
   - **Parts used**: Leaves.
   - **Traditional uses**:
     Fresh leaf extract 1-2 teaspoon full taken orally in empty stomach for the period of nearly 27 days in the early diabetic conditions.

   - **Family**: Zingiberaceae.
   - **Local name**: Iang.
   - **Parts used**: Fruit.
   - **Traditional uses**:
     About 8 gm of rhizome were grinded mixed with water and ½ tea spoonful of honey then taken orally for one month after meal once a day at bed time.

   - **Family**: Convolvulaceae.
   - **Local name**: kalmi-sak.
   - **Parts used**: Leaves.
   - **Traditional uses**:
     Dried leaves powdered (2 gm.) mixed with 50 ml of warm water then taken orally.

    - **Family**: Crassulaceae.
    - **Local name**: Paterkuchii.
    - **Parts used**: leaves.
    - **Traditional uses**:
      10 gm of raw leaves grinded with 100 ml of water, after preparation of extract then taken orally 2-3 teaspoon early hours in the morning.
11. *Lantana camara* L.
   Family: Verbenaceae.
   Local name: *Japanlao*.
   Parts used: Leaves.
   Traditional uses:
   Fresh young leaves are consumed as raw.

   Family: Lamiaceae.
   Local name: *Durbasi*.
   Parts used: Leaves.
   Traditional uses:
   The young leaves juice taken orally (3ml) once a day for controlling diabetics.

   Family: Moringaceae.
   Local name: *Sajana*.
   Parts used: Fruits.
   Traditional uses:
   The fruit juice (5ml.) taken orally after food once a day for controlling blood sugar.

14. *Momordica charantia* L.
   Family: Cucurbitaceae.
   Local name: *Chengu*.
   Parts used: Fruit.
   Traditional uses:
   The fruit juice (5ml) taken orally twice in a day along with black salt for controlling diabetics.

15. *Murraya korengii* (L.) Spreng.
   Family: Rutaceae.
   Local name: *Kripattu*.
   Parts used: leaves.
   Traditional uses:
   The leaf extract 2-3 teaspoon taken early morning once a day.

16. *Ocimum sanctum* L.
   Family: Lamiaceae.
Local name: *Tulsi*.

**Parts used:** Leaves.

**Traditional uses**

The aqueous extract of leaves taken orally once a day which may reduced the blood sugar level.

17. *Phyllanthus emblica* L.

**Family:** Euphorbiaceae.

**Local name:** *Sul-lu*.

**Parts used:** Fruit.

**Traditional uses:**

About 10 numbers of fruits were grinded and juice were mixed with honey and taken every day is their religious beliefs.

18. *Scoparia dulcis* L.

**Family:** Scrophulariaceae.

**Local name:** *Naipungchewk*.

**Parts used:** Leaves.

**Traditional uses:**

Fresh young leaves juice are taken for once a day before meals.


**Family:** Myrtaceae.

**Local name:** *Jam*.

**Parts used:** Seed powder.

**Traditional uses:** Seed powdered (1teaspoon) is taken with 50ml of water at morning in empty stomach and also in the evening before meals.


**Family:** Combretaceae.

**Local name:** *Bukhala buthai*.

**Parts used:** Bark.

**Traditional uses:**

The bark powdered (1Tea spoonful) mixed considerable amount of warm water then taken orally before food once a day.
CONCLUSION

The Halam peoples living in the forest or in close proximity of the forest are dependent upon herbal practices due to lack of communication and negligence from the both sides, cost of allopathy and have deep faith upon their old treaties and tradition. The plant parts such as leaves, fruit, seed powdered and whole plant are used by Halam tribes as a medicine and their knowledge of practice has come down through generations. But now-a-days this flow of indigenous knowledge from elder to younger generation is reluctant to learn about traditional medicinal practices. The younger generation often leaves their villages because of the profound economic changes. Indigenous practices and knowledge regarding the suitable harvest and utilization of plant resources as medicine should be documented and preserved before the disappear.

Acknowledgements

The authors are express thanks to the Halam medicine men for sharing their valuable knowledge with us without their cooperation the work would not be possible.

REFERENCES