EVALUATION OF ANTI-MICROBIAL ACTIVITIES OF THE SIDDHA POLYHERBO-MINERAL FORMULATION UDARANOI NIVARANA THIRAVAGAM

S. Ethel Shiny*

*Department of Gunapadam – Marunthiyal, Santhigiri Siddha Medical College, Thiruvananthapuram, Kerala, India.

ABSTRACT
Udera Noi Nivarana Thiravagam is a herbo mineral formulation taken from Anuboga vaidya Navaneetham which has been indicated for its anti microbial properties. All the ingredients in the drug were properly collected, preserved and authenticated by experts. The Ingredients are purified properly as per the traditional Siddha Literatures. The aim of the present study was to validate the anti microbial property of Udera Noi Nivarana Thiravagam. Preface: The present study examined the in-vitro screening of antimicrobial activity of siddha drug Udera Noi Nivarana Thiravagam in albino rats. Methodology: The antimicrobial activity of Udera Noi Nivarana Thiravagam were tested for antimicrobial activity through Kirby-Bauer method (Agar diffusion testing). The microorganisms used in the present study include Staphylococcus aureus, E.coli, klebsiella, pseudomonas aurigenosa. Outcome: It was observed that antimicrobial studies of UNT showed that it is sensitive against E-col, Klebsiella penumoniae and Pseudomonas aeruginosa.

KEYWORDS
Siddha, Udera Noi Nivarana Thiravagam and Anti-microbial activity.

INTRODUCTION
Siddha System is the primitive form of medicine practiced from the ancient times. The System was invented by Siddhars. They followed various measures to cure diseases. They wrote various formulations. According to the ancient philosophies, drugs from herbs have been using for the elimination of microorganisms. Many plants derivatives such as spices, fruit preparations, vegetable preparations or extracts have been used for centuries for the preservation and extension of
the shelf life of foods. Plants produce a diverse range of bioactive molecules, making them a rich source of different types of medicinal compounds; have continued to play a dominant role in the maintenance of human health, since ancient times. Over 50% of all modern clinical drugs are of natural product origin and it also plays an important role in drug development programs in the pharmaceutical industry.

Herbomineral medicine holds an indispensable major position in Siddha pharmacology. The Siddhars had a systematic approach towards the selection of drugs starting with herbs and ending with higher order medicines of metals and minerals. This formulation is called Thiravagam. It is one of the 32 internal medicine in the Siddha system, being in liquid form it acts very quick than other formulations, it is called as Pugai neer and Sakthineer.

In the present study Udara Nai Nivarana Thiravagam, Siddha formulations mentioned in the Classical Siddha texts consists of salts, minerals and plant products. The drug is used in the treatment of Gunmam (Peptic ulcer disease). The route of administration is internal via oral. The recommend dose is 8.4 – 16.8grams with hot water as adjuvant is taken for the testing of antimicrobial activity.

MATERIALS AND METHODS

Collection of the raw drugs

The raw drugs Kariyuppu (Sodium Chloride), Karchunnam (Lime stone), Uzhamun (Sodium bicarbonate) and root bark of Mutsangan (Azima tetracantha) are brought from local drug shop in Tirunelveli, Tamilnadu.

Fresh leaves are Yanai Nerunjil (Pedalium murex) was brought from Thuckalay, Kanyakumari district, Tamil Nadu.

Identification and authentication of raw drugs

The raw materials were identified and authenticated by the experts of PG Gunapadam Department, Government Siddha Medical College, Tirunelveli.

The identified raw materials were conserved in the laboratory of PG Gunapadam Government Siddha Medical College, Tirunelveli for further reference

Purification of the raw drugs

Purification of Kariyuppu (Sodium Chloride)

Sodium chloride was dissolved in seawater or rainwater and filtered. The filtrate was boiled into a semisolid state. Then it is placed under day light. It was allowed to dry and scrapped from the vessel.

Purification of Karchunnam (Lime stone)

Limestone was heated in water and it was dried under daylight.

Purification of Uzhamun (Sodium bicarbonate)

Sodium bicarbonate was mixed with water and the filtrate was boiled until to a semisolid state then it was placed under day light and allowed to dry. The dried salt bars were scrapped from the vessel.

Purification of Mutsangan (Azima tetracantha)

Azima tetracantha root bark was taken and the outer covering of the roots were removed with a knife.

Purification of Yanai Nerunjil (Pedalium murex)

Leaf of the Pedalium murex was cleaned with a cloth and the dried and infected leaves were removed.

Preparation of the drug - Udaranoi nivarana Thiravagam

Reference of the drug - Udaranoi nivarana Thiravagam

Udaranoi nivarana Thiravagam (UNT) has been selected from the classical siddha literature Anuboga viadhya navanetham part -3.

Ingredients of the test drug

The ingredients of the drug are as follows

Kariyuppu (Sodium chlodium )
Karchunnam (Lime stone)
Uzhamun (Sodium bicarbonate)
Root barks of Mutsangan (Azima tetracantha)
Leaves of Yanai nerunjil (Pedalium murex)
Well water- 5.2 litres

Preparation of the medicine -Udaranoi nivarana Thiravagam

The mineral drugs and the root of Azima tetracantha and leaves of Pedalium murex are grinded well and transferred to the distillation

Available online: www.uptodateresearchpublication.com
apparatus (valaiyanthiram) an intensely heated. During the process of heating the drugs were completely decomposed and expel the fumes. The fumes are condensed at the condenser submerged in cold water and the drug was collected in a vessel.

**Preservation of the drug**
It is stored in a tight glass container to prevent any other contamination.

**Pharmacological evaluation**

**Antimicrobial activity of Udara Noi Nivarana Thiravagam**

**Method**
Kirby-Bauer method (Agar diffusion testing).

**Nutrient broth preparation**
The sterilized (autoclaved at 120°C for 30 min) medium (40-50°C) was inoculated (1ml/100ml of medium) with the suspension (150 cells per ml) of the Micro-organism (matched to Mc Farland turbidity standard) and poured in to a Petri dish to give depth of 3-4mm.

**Cleaning and sterilization**
The glass-wares used were cleaned with cleaning solution and sterilized in hot air oven to 180°F for 3 hours. All nutrient media were sterilized by autoclave (121°C, 15psi for 15-20 mins).

The paper saturated with the test compounds Udara Noi Nivarana Thiravagam was placed on the solidified medium.

The plates were pre-incubated for 1 hour at room temperature and incubated at 37°C for 24 and 48 hours for anti-bacterial activities respectively.

**Standard - control drug**
Amikacin is used as standard for anti-bacterial respectively at the concentration of 50mcg / disc.

*In-vitro* antimicrobial activity of Udara Noi Nivarana Thiravagam was screened against bacteria strains such as *Staphylococcus aureus, Escherichia coli, Klebsiella pneumoniae* and *Pseudomonas aeruginosa*.

**Observations and Inference of the Anti-microbial activity**
It was observed that antimicrobial studies of UNT showed that it is sensitive against *Escherichia coli* inhibition of the growth of the micro organism at 100µ/ml concentration for the organism. Our results confirmed the traditional use of UNT has antimicrobial activity.

**DISCUSSION**
In the alternative methods, the uses of plant materials to control pathogenic microorganisms have been considerable interest in the recently and plants products have been shown resistant against pathogenic bacteria. The emergence of multi-drug resistant strain of many pathogens is a serious threat and makes more difficult to cure diseases. The development of effective natural and non-toxic drug for treatment must be directed towards. The present study was to explain the antimicrobial property of Siddha poly herbo-mineral formulation *Udaranoi Nivarana Thiravagam*.

<table>
<thead>
<tr>
<th>Table No.1: Observations of the anti microbial activity of the Udara Noi Nivarana Thiravagam</th>
</tr>
</thead>
<tbody>
<tr>
<td>S.No</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>4</td>
</tr>
</tbody>
</table>
CONCLUSION
The Siddha formulation *Udaranoi Nivarana Thiravagam* (UNT) has promising action in the management of super opportunistic infections caused by both gram positive as well as gram negative organisms in peptic ulcer disease. UNT showed highly sensitive inhibitory actions against both classes of bacteria. It is concluded that this study would exhibit some valuable compound that has to be used to more potential antimicrobial drugs of natural origin. Further studies are needed to identify the biologically active compounds and to evaluate the efficiency of the compound against pathogenic microorganisms associated with various human diseases.

ACKNOWLEDGEMENT
The authors wish to express their sincere gratitude to Department of Gunapadam – Marunthiyal, Santhigiri Siddha Medical College, Thiruvananthapuram, Kerala, India for providing necessary facilities to carry out this research work.

CONFLICT OF INTEREST
We declare that we have no conflict of interest.

REFERENCES

Available online: www.uptodateresearchpublication.com
11. Lohar De. Protocol for testing Ayurvedic, Siddha and Unani Medicines, *Pharmacopical Laboratory of Indian Medicine, Ghaziabad*, 77-89.
20. Sambasivampillai. Tamil to english dictionary of medicine-chemistry, *Botany and Allied Sciences Published by Directorate of Indian Medicine and Homeopathy,Chennai*.
21. Sambasivampillai T V. Siddha medical dictionary, Department of Indian medicine and Homeopathy, *Chennai*.


Available online: www.uptodateresearchpublication.com March – April 55