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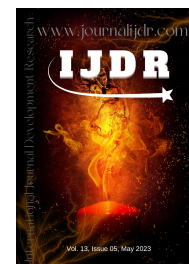
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RESEARCH ARTICLE

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PRELIMINARY QUALITATIVE PHYTOCHEMICAL, PHYSICOCHEMICAL AND BIOCHEMICAL CHARACTERIZATION OF HERBAL FORMULATION NOCHIVER KUDINEER (VITEX NEGUNDO)

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ABSTRACT

Introduction: The Siddha system is one of the ancient system of medicine created by siddhars. Thandagavatham is one among the vatha disease, it was coming under the head of degenerative disease. The clinical symptoms and sign is similarly in correlated in modern science is lumbar spondylosis. Thandagavatham is mentioned in various text books and manuscript. Among the internal medicines Nochi ver kudineer (Vitex negundo. Verbenaceae family) is indicated for Thandagavatham (Lumbar spondylosis) in Gunapadam part- 1 (Mooligai vaguppu). In Indian traditional medicine system vitexnegundo Linn is referred as " Sarvaloganivarani" – the remedy for all disease. Vitex negundo Root mainly deals with Bronchitis, Asthma, Dysentery, Irritable bowel, Fever, Urinary problem, Calculus, Gout, Rheumatism by its various mode of pharmacological properties like Analgesic, Anti inflammatory, Anti oxidant, Anti pyretic, Arthritic, Anti microbial, Nephro protective activity, Antinociceptive activity. **Aim:** The aim of the study is to perform qualitative Phytochemical evaluation, physicochemical analysis, Biochemical analysis of Nochi ver kudineer. **Material and methods:** The raw drug was purchased from reputed herbal drug shop, Thackkalay, kanyakumari district and it is purified then made into decoction as per the siddha literature. **Results:** The Phytochemical evaluation showed the presence of Terpenoids, Phenols, Quinones, Glycosides, Alkaloids (Table 2). The Bio chemical analysis showed the presence of Sulphate, Chloride, Ferrous iron, Tannic acid, Unsaturated compounds, Reducing sugar and Aminoacid (Table 4). The Physico chemical analysis showed the total ash 2.61% Acid insoluble ash 0.35%, Water soluble ash 0.86%, Sulphate ash 4.44%, Alcohol soluble extractives 6.66%, Water soluble extractives 5.96% (Table 3) were observed from the study.

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INTRODUCTION

The Siddha system is a natural system of medicine and was originated in tamilnadu and practised by Tamil people of India. Thandagavatham (Lumbar spondylosis) is one of the most common painful condition. According to Yugivaithiyachinthamani 800, Thandagavatham is one of the 80 vatha disease. It is characterized by low back pain, unable to stretch limbs and difficulty in passing urine and stools. It is characterized by degenerative changes in the intervertebral disks and lumbar spine. Plants are produce a diverse range of bioactive molecules making them a rich source of different types of medicines. All the parts of Vitex negundo possesses great medicinal values and it is employed as a medicine in Siddha system of medicine. Present study is to collect presence of bioactive constituents such as physicochemical, Phytochemical and biochemical's studies of Nochi ver kudineer (Vitex negundo) to give the beneficial information for the further studies were discussed.

MATERIALS AND METHODS

The details about the Siddha formulation Nochi ver kudineer was acquired from Siddha text Vaithiya Rathinam Dr.K.S.Murugesu Muthaliar Gunapadam pagam-1(Mooligai vaguppu). Required raw drug was purchased from Thackkalay, kanyakumari district, Tamilnadu. The component of the drug was purified according to the proper proceeding methods suggested in classical siddha literature. The adulterant dust and other materials are removed. The trial drug is purified, dried and grinded into kudineer chooranam .10 gm of kudineer chooranam is added with 400 ml of water and boiled until it reduced into ¼ of its of its quantity and make kashayam to dispense.

RESULTS AND DISCUSSION

Preliminary Phytochemical Analysis: The drug was extracted by using Alcohol. The extract were concentrated under reduced pressure

at room temperature. The extract is subjected to following tests. The results are discussed below.

Table 1. Ingredient of Nochi ver kudineer

S.No	Tamil name	Scientific name	Part used	Quantity
1	Nochi ver	Vitex negundo Linn	Root	Q.S

Table 2. Phytochemical analysis of the Nochi ver kudineer

Tests	Results
Saponins	-
Tannins	-
Terpenoids	+
Phenols	+
Steroids	-
Quinones	+
Glycosides	+
Carbohydrates	-
Alkaloids	+
Flavanoids	-
Protein	-

+ Present
- Absent

Chemical Analysis

Table 3. Physico chemical analysis of Nochi ver kudineer

S.No	Test	Results
1	LOD at 105 C	6.63%
2	Total ash	2.61%
3	Acid insoluble ash	0.35%
4	Water soluble ash	0.86%
5	Sulphate ash	4.44%
6	Water soluble extract	5.96%
7	Alcohol soluble extract	6.66%
8	pH	7.69%
9	Volatile oil	Nil
10	Foaming index	166.66
11	Swelling index	4.0 ml

Bio Chemical Analysis

Preparation of the extract: 5 gms of the drugs was weighed accurately and placed in a 250 ml clean beaker then 50 ml of distilled water is added and dissolved well. Then it is boiled well for about 10 minutes. It is cooled and filtered in a 100 ml volumetric flask and then it is made to 100 ml with distilled water. This fluid is taken for analysis.

Table 4. Bio chemical analysis of Nochi ver kudineer

S.No	Biochemical analysis	Results
1	Tests for calcium	-
2	Tests for sulfate	+
3	Tests for chloride	+
4	Tests for carbonate	-
5	Tests for starch	-
6	Tests for ferric iron	-
7	Tests for ferrous iron	+
8	Tests for phosphate	-
9	Tests for albumin	-
10	Tests for tannic acid	+
11	Tests for unsaturation	+
12	Tests for reducing sugar	+
13	Tests for Amino acid	+
14	Tests for Zinc	-

DISCUSSION

From above table number 2, the preliminary Phytochemical Analysis indicates the presence of Terpenoids, phenols, quinones, Glycosides,

alkaloids. These components have some therapeutic values are briefly discussed below

Terpenoids: Terpenes are natural compounds found in several organisms belonging to the animal and plant kingdoms. Several studies have attributed to this by family of compounds a range of pharmacological properties such as anti-cancer, anti microbial, antifungal, antiviral, anti hyperglycemic, analgesic, anti inflammatory and anti parasitic.

Phenols: Phenolic compounds are able to inhibit either the production or the action of pro inflammatory mediators resulting in anti inflammatory capacity. Plant-based compounds containing phenol are known to be anti-oxidants. This means that they can stop the reaction of free radicals with other molecules in your body, preventing damage to your DNA as well as long-term health have anti-oxidant property.

Quinones: Several studies revealed that a range of pharmacological properties such as anti cancer, anti aging, anti oxidant, anti inflammatory, anti microbial.

Alkaloids: Alkaloids play an essential role in both human medicine and in an organism's natural defence. Alkaloid compound possess the potent anti inflammatory and analgesic activities

Glycosides: A broad range of Glycosides extracted from medicinal plants have potential anti inflammatory analgesic and antinociceptive effects towards different in vitro and in vivo models respectively. The presence of these Phytochemical (Table no 2) exhibits the therapeutic effectiveness of the sample drug. So the Nochi ver kudineer have Anti inflammatory, analgesic, anti oxidant, blood purifier, Anti hyperglycemic, anti microbial properties. From above table number 4, Biochemical analysis showed, the presence of sulphate, chloride, ferrous iron, tannic acid, unsaturated compounds, reducing sugar and amino acid. These component have some therapeutic values are briefly discussed below,

Sulphate: Chondroitin sulfate prevents joint space narrowing and reduce joint swelling and effusion. To produce these effects, chondroitin sulfate elicit an anti inflammatory effect at the chondral and synovial levels.

Chloride: Chlorides suppress the production of inflammatory mediators, Nitric oxide and Prostaglandin E 2 and pro inflammatory cytokines.

Ferrous Iron: Iron and its homeostasis are intimately tied to the inflammatory response. Chronic diseases are also profoundly influenced by iron status. Increased iron stored are correlated with markers of chronic inflammation.

Tannic acid: Tannins are medicinally significant due to their astringent properties. They promote rapid healing and the formation of new tissues on wounds and inflamed mucosa.

Amino acid: The Amino acid produced no gastric ulceration or overt acute toxicity in doses which effectively suppress inflammation.

CONCLUSION

The qualitative and qualitative analysis from the studies, showed the vitexnegundo is highly responsible and therapeutic value of treating Thandagavatham. The therapeutic efficacy of the drug is due to the presence of these constituents especially treating inflammatory and degenerative disease.

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