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The Azadirachta Indica Bark and Cow Urine for the Treatment of Urticaria (Hives)

Rushikesh Sanjay Tak[1], Dnyaneshwar Keshav Solanke[2], Yash Chotu Shirude[3], Ajit Sureshrao Pardikar[4] and Harpreet Kaur[5]

[1]Bachelor of Pharmacy in Sinhgad Institute of Pharmaceutical Sciences, Lonavala. Working as a Research Scholar at Wel 'n' Wil Lifescience Health & Research Center Raikot Road, Mullanpur, Ludhiana-141101, Punjab, INDIA.

[2]Bachelor of Pharmacy in Sinhgad College of Pharmacy, Pune. Working as a Research Scholar at Wel 'n' Wil Lifescience Health & Research Center Raikot Road, Mullanpur, Ludhiana-141101, Punjab, INDIA.

[3]Bachelor of Pharmacy in Sinhgad Institute of Pharmaceutical Sciences Lonavala. Working as a Research Scholar at Wel 'n' Wil Lifescience Health & Research Center Raikot Road, Mullanpur, Ludhiana-141101, Punjab, INDIA.

[4]Bachelor of Pharmacy in Sinhgad College of Pharmacy, Pune. Working as a Research Scholar at Wel 'n' Wil Lifescience Health & Research Center Raikot Road, Mullanpur, Ludhiana-141101, Punjab, INDIA.

[5]Master of Microbiology from Lovely Professional University. Working as Research Director at Wel 'n' Wil Lifescience Health & Research Center Raikot Road, Mullanpur, Ludhiana-141101, Punjab, INDIA.

[5]Corresponding Author: harpreetkaur1182@yahoo.com

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ABSTRACT

The Aim of the study was to investigate the use of Azadirachta Indica bark in combination with Cow urine for the External Treatment of Urticaria.

Neem Has been used for the treatment of various diseases both in modern and Traditional Systems of medicine. Over 96 patents have been granted based on different use of the plant. It gives a clear view of the importance of the plant and its daily life use in society. Cow Urine is Widely used as a therapeutic agent and additive in India, for the treatment of infections cuts, and burns. Cow urine has been considered sacred a used in many rituals. cow urines are also used in purification and disinfecting houses.

Cow urine and neem bark powder 41mm against urticaria while cow urine alone shows 32 mm inhibition zone diameter and the Suspension produced by Neem bark and cow urine shows positive changes in the patient. It proves that the combination of the neem bark powder with the cow urine has very high antimicrobial activity that speeds up the healing process of the rashes. It shows the antibacterial property has been boosted in combination. With additional antioxidant properties of the cow urine play a significant role in treatment.

Keywords- Cow Urine, Therapeutical, Benefits, Disinfection, Purification, Antioxidant.

I. INTRODUCTION

Azadirachta indica, commonly known as Neem, belongs to Family Meliaceae and is one of the most versatile medicinal plants that has gained worldwide importance due to its medicinal and insecticide properties. There are several studies showing the effects of Azadirachta indica in experimental and clinical models (Dallaqua B et al., (2013). Its medicinal value and distributed widely in the world. The chemical constituents contain many biologically active compounds that can be extracted from neem, including alkaloids, flavonoids, triterpenoids, phenolic compounds, carotenoids, steroids and ketones, biologically most active compound is azadirachtin, it is actually a mixture of seven isomeric compounds labeled as azadirachtin A-G and azadirachtin E is more effective. All parts of the tree have been used medicinally for

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centuries. It has been used in Ayurvedic medicine for more than 4000 years due to its medicinal properties. The earliest Sanskrit medical writings refer to the benefits of Neem's fruits, seeds, oil, leaves, roots, and bark (Hashmat, I., Azad, H., & Ahmed, A. (2012). Urticaria commonly referred to as hives, is a kind of skin rash notable for pale red, raised, itchy bumps. Hives might also cause a burning or stinging sensation. Hives are frequently caused by allergic reactions; Externally it's the oil applied as an antiseptic for urticaria and chronic skin diseases like eczema, scabies, ringworm, and maggot-infested wounds (Dubey, S., & Kashyap, P. (2014). Cow urine has a unique place in Ayurveda and has been described in 'Sushruta Samhita' and 'Astanga Sangraha' to be the most effective substance of animal origin with innumerable therapeutic values. It has been recognized as the water of life or "Amrita" (beverage of immortality). Different Ayurvedic literature has mentioned the properties and uses of Cow urine for the treatment of various diseases. Lots of research have been conducted in Cow Urine Treatment and Research Centre, Indore over the past few years and it has been reported that gomutra is capable of curing blood pressure, blockage in arteries, arthritis, diabetes, heart attack, cancer, thyroid, asthma, psoriasis, eczema, prostate, fits, AIDS, piles, migraine, ulcer, acidity, constipation, gynecological problems and several other diseases. It is very helpful in all kinds of skin problems, itching, sunburns, eczema, psoriasis, acne, etc (https://www.researchgate.net/publication/320163094_REVIEW_ARTICLE_BENEFITS_OF_COW_URINE_-_A_REVIEW). The main aim of this research is to Study the Azadirachta Indica and cow urine For the Treatment of the urticaria (Hives).

Table 1: Taxonomy of Azadirachta indica (Oli, B., & Gautam, D. (2022)

Kingdom	Plantae
Sub- Kingdom	Tracheobionta
Division	Magnoliophyta
Class	Eudicot
Subclass	Rosidae
Order	Sapindales
Family	Meliaceae
Genus	Azadirachta
Species	A. indica

Ecology

Neem grows in the plains and in areas up to an elevation of 1850 m. In its introduced range, Neem is cultivated from sea level to an altitude of 1500 m. Neem is tolerant to most soil types including dry, stony, shallow soils, lateritic crusts, highly leached sands, and clays. With an extensive and deep root system, the hardy Neem can grow and flourish even in marginal and leached soils. The Neem tree is noted for its drought resistance. Normally it thrives in areas with sub-arid to sub-humid conditions, with annual rainfall between 400 and 1200 mm. It can grow in regions with an annual rainfall below 400 mm, but in such cases, it depends largely on the groundwater levels. Neem can grow in many different types of soil, but it thrives best on well-drained deep, and sandy soils (pH 6.2-7.0). It is a typical tropical/subtropical tree and exists at annual mean temperatures between 21-32 °C. It can tolerate high to very high temperatures. It does not tolerate temperatures below 4 °C (leaf shedding and death may ensue (Hasan, A. AZADIRACHTA INDICA, AND ITS MEDICINAL USE).

Cow Urine Composition

- 95% water
- 2.5% urea
- Minerals
- 24 types of salts
- Hormones, and
- 2.5% enzymes

Iron, calcium, phosphorus, carbonic acid, potash, nitrogen, ammonia, manganese, iron, sulfur, phosphates, potassium, urea, uric acid, amino acids, enzymes, cytokine, and lactose (Randhawa, G. K., & Sharma, R. (2015).

Pharmacological activities

Azadirachta extracts are well documented for the treatment of skin, gastric ulcer, respiratory disorders, and inflammatory infections due to the presence of the bioactive molecules present in the different parts of the neem plant. The main active molecules present in the leaves, bark and seeds include the following compounds. (Saleem S et al., (2019). Nimbin: anti-histamine, anti-fungal, anti-inflammatory, antipyretic, (Saleem S et al., (2019).

- Nimbidin: antiulcer, analgesic, antibacterial, antiarrhythmic, antifungal, (Linton YM et al., (1997),
- (Mordue (Luntz) AJ et al., (1996).
- Ninbidol: antiprotozoan, antitubercular, antipyretic (Jiang ZH et al., (2008), (Simmonds MSJ et al., (2000).
- Gedunin: antifungal, vasodilator, antimalarial, (Chutulo EC et al., (2018).
- Sodium nimbinate: spermicide, antiarthritic diuretic (Benelli G et al., (2017), (Nisbet AJ et al., (1994).
- Quercetin: antiprotozoal (Chutulo EC et al., (2018), (Gupta SC et al., (2017).
- Salannin: insect repellent (Nisbet AJ et al., (1997).
- Azadirachtin: antifeedant, antihormonal, insect repellent (Saleem S et al., (2019).

II. RESEARCH METHODOLOGY

Material

1) Distilled purified cow urine
2) Neem bark
3) Distilled water

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Equipment used

Ph meter, Distillation Flask, Powder Grinder, Condenser, Electronic balance, Thermometer, Beaker, Tripod Stand, Conical flask, Burner, Mortar, and pestle, Mueller- Hinton agar, Antibiotic discs, Cotton swabs, Petri dishes, 0.5 McFarland Turbidity standard, Inoculum, Forceps, Metric ruler or caliper

III. PROCEDURE

Sterilization of Cow Urine:

Antibacterial activities of cow urine samples were screened by the disc diffusion method according to the method described by Benbelaid et al., 2013.

Bacterial culture

Many bacterial infections have been associated with urticaria manifestation, such as Helicobacter pylori, Streptococcus, Staphylococcus, Mycoplasma pneumonia, Salmonella, Brucella, Mycobacterium leprae, Borrelia, Chlamydia pneumonia, and Yersinia enterocolitica (Minciullo, P.L., Cascio, A., Barberi, G. and Gangemi, S., 2014). In this we use staphylococcus bacteria to test antimicrobial activity.

Methodology of disc diffusion

1. Sterilize the area with disinfectant while performing the test.
2. A sterile cotton swab is dipped into the inoculum i.e Staphylococcus bacteria inoculum
3. Swab the surface area of the plate completely by rotating the plate.
4. Allow the plates to dry for 5 minutes.
5. Sterilize the forceps with alcohol before picking up antibiotic discs.
6. The concentration of the disc made was 32 µl.
7. Discs should be placed at a distance of 24mm.
8. Lightly touch each disc with forceps to ensure that it is in good contact.
9. Incubate the plate upside down for 24 hours at 37ºC.

Distillation of cow urine and water:

The procedure used for the distillation of cow urine and water is simple distillation

1) Take 50 ml of fresh cow urine, then it undergoes a simple distillation process after completion of the process takes the end product. End product PH must be between 7.4-8.4 (Alkaline). (Randhawa G. et al., (2010).
2) Take 50 ml of water, then it undergoes a simple distillation process and end product is distilled water.

Method of formulation of suspension

1) Take clean and sterilized neem bark. Then make a fine powder of the bark using electric Grinder.
2) Take an equal proportion of bark power, distilled cow urine, and distilled water. (1:1:1)
3) Mix them properly with the help of a mortar and pestle
4) Suspension of neem bark power is prepared with cow urine and water.

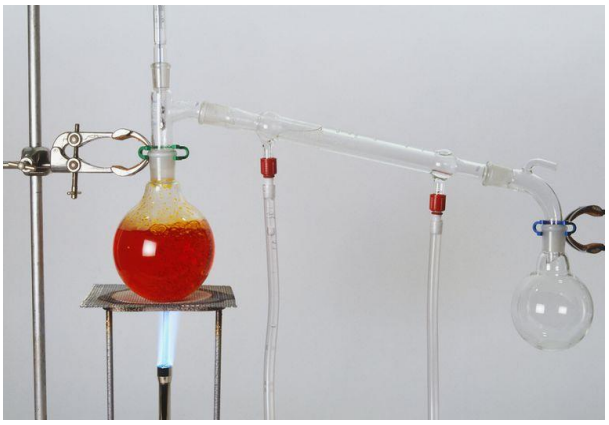

Fig 1.1 Distilled urine

Sample	Concentration of disc	Day 1	Day 2	Day 3
1. Control cow urine + Staphylococcus bacterial culture	32µl	19mm	22mm	32mm
2. Cow urine and neem bark extract + Staphylococcus bacterial culture	32µl	27mm	33mm	41mm

IV. RESULT AND DISCUSSION

Use of Suspension:

A small amount of suspension is used externally on the urticaria, it is also used on skin rashes and cut by applying with slightly rubbing on the skin.

Consent:

Our study was on patients with urticaria with the written permission of the patient.

Result:

The Healing rate of the rashes has been twice. Externally applying on the urticaria shows extraordinary recovery. Also, with the disc diffusion method Cow urine and neem bark powder 41mm against Staphylococcus bacterial while cow urine alone shows 32 mm inhibition zone diameter It is concluded that the antimicrobial properties of cow urine and neem bark in combination become more effective than cow urine alone and proved as a good source of antimicrobial agents.

For the best result use twice a day:

Antioxidant and antibacterial activity of neem and cow urine. Plays the main role in treatment. Additional properties of neem boost up recovery of the patient.

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Fig 1.2 Day 1

Fig 1.3 Day 2

Fig 1.4 Day 4

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